PHYSIOGNOMY

AND

EXPRESSION

BY

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PREFACE.

THIS book is a page of psychology—a study on the human countenance and on human expression. Scientific both in its end and in its method, it takes up the study of expression at the point where Darwin left it, and modestly claims to have gone a step further.

I have set myself the task of separating, once for all, positive observations from the number of bad guesses, ingenious conjectures, which have hitherto encumbered the path of these studies. My wish has been to render to science that which is due to science, and to imagination that which is due to imagination. The human countenance interests all ; it is a book in which all must read, every day and every hour. The psychologist and artist will find in this work new facts and facts already known, but interpreted by new theories. Perhaps it may also throw into prominence some of the laws to which human expression is subject.

P. M.

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HISTORICAL SKETCH OF THE SCIENCE OF PHYSIOGNOMY AND OF HUMAN EXPRESSION.

IN the restricted portion of the world which our human eyes can penetrate we see the first germs of living beings born and developing in conformity with laws identical with those which rule over the birth and evolution of sciences in the tranquil laboratory of the intellect. At first a confused vortex of atoms appears, each seeking the other and grouping themselves in attempts to form the first combinations of force and the simplest symmetries of form. Soon the organs of inferior order indistinctly manifest themselves ; the parts which were at first confused are differentiated little by little. In proportion as the members take shape and their articulations are established, they go on to mark out a scale of large things, enclosing others small and very small, which will in turn become very large ; in like manner an infinite series of germs contained in one germ will successively give birth to new forms and to new descendants. And finally we find ourselves face to face with an organism, provided with distinct members, which claims for itself a part of space, a share of the sun, and a name. Thus are born the mushroom and the oak, the ant and the man ; in like manner science too is born and develops.

The progress of all science has also been the progress of that science which we call physiognomy or metoposcopy, different names signifying the same thing—the study of the human countenance. Long

before these words had found a place in our dictionaries, and in the history of science, man had looked into the face of his fellow-man to read there joy and pain, hatred and love, and had sought to draw thence conclusions both curious and of daily practical use. There is no untutored people, no rudimentary language which has not incorporated in some proverb the results of these first sports of divination. Humpbacks, squints, sparkling or dull eyes, the varying length of the nose, the varying width of the mouth, all are honored or condemned in popular proverbs. These proverbs are the first germs of the embryonic substance, which later on yield materials for a new science.

In these first attempts we always meet the infantine inexperience of ignorance; sympathies and antipathies are there translated into irrefragable dogmas and verdicts without appeal; instinct and sentiment hold the place of observation and calculation. All is seasoned with the magic which is one of the original sins of the human family. This seasoning always becomes more abundant in proportion as the need of new foods increases, and ends by being almost entirely substituted for the real nourishment, which is insufficient to satisfy the great hunger. And then man, not contented to examine the human face and translate it into proverbs and into physiognomical laws of fortuitous coincidences or suggestions of sympathy and antipathy, goes on to seek in the heavens and among the stars relations between the constellations and our features, and erects this odd edifice of judicial astrology—a veritable white magic applied to the study of the human face. Magic demands a magician; he envelops himself in the mystery of the inconceivable to explain the unintelligible, and magic becomes an industry, a trade which fattens a small number of knaves at the expense of a large number of fools.

Such is the true origin, little honorable as it may be, of Physiognomy. Then come the first writers, who collect from the mouths of the people and in their proverbs the scattered materials of the new science; they add numerous conjectures of their own, give a name to their doctrine, and return to the ignorant crowd in a dogmatic form all that they first received from them. A literature in its childhood is always encyclopædic. Therefore the first elements of physiognomy are to be found in the Bible, in the Fathers, in the philosophers, and in the poets. Giovanni Battista Dalla Porta was right when he wrote on the title-page of the beautiful *First Book* of his work* that *physiognomy was born of natural principles;* and in his preamble, in a page abounding in audacity and powerful historical syntheses, he was justified in showing how the germs of the science of which he was beginning the study were to be found scattered in the works of the great minds who had preceded him. I have pleasure in quoting some passages.

* Gio. Battista Dalla Porta Napolitano, *Della Fisonomia dell' huomo.* Libri sei Padova, 1627, p. 1.

"Adamantius said that the character is expressed by the forehead and the eyes, even when the mouth is silent. The philosopher Cleanthes was wont to say, after Zeno, that dispositions might be recognized from the face. The Pythagoreans had a rule, according to Iamblichus, when disciples came to them demanding to be instructed, to accept none, unless they had ascertained by clear indications, drawn from their countenances and their whole external appearance, that they would succeed in learning. They said that nature constitutes the body after the soul, and gives to this the instruments which are necessary for it, that she shows us in the body the image of the soul, or rather that the one is the pattern of the other. We read in Plato that Socrates admitted none to philosophy unless assured by examining his face that he was suited to it.

"The physiognomy of Alcibiades indicated, said Plutarch, that he was destined to raise himself to the highest rank in the republic. Plato, and after him Aristotle, said that nature proportions the body to the activity of the soul. In fact every instrument which is made with a view to a certain thing must be proportioned to this thing. All the parts of the body are made for some thing, and this cause for which a thing is made is an action; whence it clearly follows that the body altogether has been created by nature with a view to an excellent action. Nestor, according to Homer, by the resemblance which he finds in the face of Telemachus, conjectures as to what his soul must be.

"'By certain signs that I discern upon thy face, O illustrious youth, I recognize whose son thou art. I do not wonder to see such splendor in thy eyes. Thy face is proud and generous, thy great eloquence and thy reason recall to me thy father. What youth could such a one as thou be, were he not the son of the great Ulysses?'"

Aristotle wrote a book on the physiognomy, and Plato, although he was not an evolutionist, compared the physiognomy of man to that of animals. Dalla Porta, even while he refuted the great Greek philosopher on this point, and maintained that it was unreasonable to imagine that it would be possible to find a man whose body was entirely similar to that of an animal, is still continually making analogies in his work between man and the animals, and illustrates his comparisons by numerous figures.

To quote an example, Plato had said that the genus lion must be generous and bold · in other words, that a man would be courageous if he had something of the lion, such as a broad chest, wide and powerful shoulders, etc. In his turn, Dalla Porta continually draws parallels between peacocks, dogs, horses, asses, oxen, cocks, pigs, and other brutes on the one side, and men on the other. Two examples will suffice to show up to what point the Neapolitan physiognomist pushed these analogies. On page 115 *bis* of the edition already quoted, he compares a marine fish, the skate, with the Emperor Domitian—

"In the following plate is seen the face of Domitian represented after his statue in marble and antique medals, and opposite a skate from nature."

And on page 164 *bis* are seen the lower limbs of an ape and those of a man with this indication—

"In the place below will be found the buttocks of the ape and those of a thin and withered man."

It appears, however, that these impious analogies formed no obstacle in those days to dying in the odor of sanctity, for Dalla Porta ended his days surrounded by universal veneration, and was interred in a church.

The Jesuit Niquetius, who was one of the most learned among those who wrote upon physiognomy in the seventeenth century, quotes in his work 129 authors, without counting, he says, *Scripturam sacram, quæ, ut ait Origines, scientiarum est universitas*, and among them St. Ambrose, St. Gregory the Great, St. Gregory of Nanzianzen, St. Gregory of Nyssus, Saint Jerome, Saint Augustin, Saint Peter Damien, Saint Thomas, among the saints; Aristotle, Plato, Cardano, Seneca, Tertullian, among the philosophers and the theologians; Xenophon, Strabo, Plutarch, Tacitus, among the historians; Aristophanes, Juvenal, Lucan, Lucian, Martial, Petronius, among the poets; Averroes, Avicenna, Hippocrates, Celsus, Galen, Pliny, among the naturalists and physicians.*

The seventeenth century was the golden age of astrological or semi-astrological physiognomy. Then, more than ever, men had a passion for the mysterious, for enigmas which had a scientific coloring. A Spanish writer, Jerome Cortes, born at Valencia, said naively in a very curious book, "Physiognomy is nothing but an ingenious and subtle science of human nature, thanks to which one may know the good or bad complexion, the virtues or vices, of the man considered as an animal."†

In fact, the good Cortes, to be consistent with his definition, gave us in his volume after his treatise on the physiognomy other curious things —such as the praise of rosemary (*Tratato segundo de las excelencias del Romero y su calidad*), the praise of the elixir of life, and a number of recipes, among which was that of a powder of frogs, *que tiene virtud de soldar las venas rompidas y un unguento preciosissimo para sanar toda fistola y llaga vieja, y otros males* (which has the property of healing burst veins, and which is a very precious ointment to cure all fistulas and old wounds, and other evils).

The works on judicial astronomy are very numerous. In them the most singular and ridiculous assertions are found. One would say that

* R. P. Honorato Nicquetio, e Societate Jesu, sacerdos, Theologus, Physiognomia humana libris iv. distincta. Editio prima, Lugduni, 1648.

† Hieronymo Cortes, *Phisonomie y varios Secretos de Naturaleza*, etc. Barcelona, 1610.

these books must have been written either by a fool or a drunkard. It will be enough to quote as an example Cardano,* who was hazarded the oddest forecasts in his work, not only as to the character as conjectured from the physiognomy, its wrinkles and its spots, but also as to the events which would happen in the course of life. In plate I., figs. *a*, *b*, *c*, specimens from his *Fisonomia astrologica* will be found.

On the forehead seven lines are drawn, consecrated, proceeding from above down to Saturn, Jupiter, Mars, the Sun, Venus, Mercury, and the Moon. As the lines were straight, oblique, or crossed, so the response varied. Fig. *b*, for example, represents a man who, according to the signs on his forehead, was doomed to die by hanging or by drowning. Fig. *c*, another who must of necessity be *tristis* or *vitiosus*.

De la Chambre exposes in these terms the sophistry on which astrological physiognomy is founded.†—

"The head is indubitably the epitome of the whole heavens: like these it has its constellations and its signs. But if we note the stars, their situation and their movements, without knowing their nature, nor why they are thus disposed, we may say as much of all parts of the face."

De la Chambre is a judicious writer. Although he lived in the midst of astrology and chiromancy he revolted against the prejudices of his time, and he dared, although timidly, to write a chapter entitled —"*The judgment we must pass on Chiromancy and Metoposcopy.*"‡ He does not deny all, he does not assent to all, and concludes by saying that it is necessary to guard against exaggerations, that there is much truth in astrology, but not so much as the chiromancist astrologers pretend.

It was, however, Dalla Porta who had the honor of combatting judicial astrology unmasked. After the book which we have already quoted, he published another—

Of Celestial Physiognomy: six books in which the falsehood of judicial astronomy is established, and wherein the way by which one may recognize in natural causes all that the aspect, the appearance, and the features of men can physically signify and announce, is put forth. (*Padua*, 1623.)

In this work the Neapolitan author demonstrates that the features of a man are due to his temperament and not to the stars; and having cited as an example the opinions of astrologers on the character of men born under the influence of Saturn, he adds:

"We have reported their opinions, not to approve them, but to refute them *as old woman's stories*. Dissimulating their falsehood, presenting as coming from heaven and the stars magnificent and prodigious things, they make us accept as divine that which is derived from natural

* H Cardani Medici Mediolanensis, Metoposcopia, etc. Lutetæ Parisiorum, 1658.

† De la Chambre, *L'art de connaitre les hommes*. Amsterdam, 1660.

‡ *Ibidem*, p. 268.

sources. We have said that the Saturnians are said to be melancholy, cold, and sapless. If we investigate the opinion of physicians, Galen attributes to the melancholy, cold, and sapless a hard and frail body, rough hair, a humid or livid complexion ; and to the melancholy generally black and bristly hair, bushy and meeting eyebrows, thick lips, and flattened nose. Others give them irregular teeth and broad chests. All that does not come from the stars, but from the temperament, as the physicians say."

Of all the writers of the seventeenth century Dalla Porta is the most famous ; he has, too, become for many people the only representative of ancient physiognomy. Under his portrait, which adorns many editions of his work, we read these verses :

" Blandus honos virtusque simul delubra tenebant,
Sed binis templis unica *Porta* fuit,
Tu quoque virtutem conjunctam nactus honori,
Amborum digne *Porta* vocandus eris."

Seventeenth century distiches, if ever any were !

Not only did Dalla Porta first openly oppose judicial astrology, but he opened up a new era for the study of physiognomy. He could only make use of the scientific materials of his time, but he employed them with the wise discernment of a positive philosopher, and his psychology is sound. He discussed the methods which may guide us in the study of the human physiognomy, and he investigated how, by the temperament of the whole body, its characteristics might be conjectured. Thus he merited his fame and justified the enthusiasm with which all learned Europe received his work, written first in Latin, then translated by him into Italian, and by others into French and Spanish.

In the seventeenth and eighteenth centuries this illustrious Neapolitan was the high-priest of physiognomy. All those who wrote subsequently pillaged him, either quoting or not quoting him, and drew plentifully from his Encyclopædia, where he had gathered all that the ancients had been able to say on the subject of the human physiognomy, and all that an observer could add to them.

Niquetius, whom we have already cited, was a very erudite writer and a good observer for his time. He also distinguished astrological from natural chiromancy. He also, like De la Chambre, felt a vague need to reject antique superstitions, and was a precurser of the experimental school which was to transform the world. The introduction to his natural chiromancy deserves recalling ; he speaks in it of the importance of the hand—

" Quid est enim manus? Zoroastro, admirabilis naturæ miraculum, Plutarcho, causa humanæ sapientiæ ; Lactantio, rationis et sapientiæ magistra, aliis, mundi artifex, amicitiæ sedes, humanæ vitæ præsidium, corporis propugnaculum, capitis defensatrix, rationis satelles, interpres animi, conciliatrix divinæ gratiæ, nervus orationis, officina sanctitatis. Isidoro dicit ur manus, quasi munus, nimirum totius corporis munis ; ministrat enim cibum ori, ceterisque membris omnibus opitulatur.

Denique fidei symbolum est, unde porrigere dextram est fidem promittere, quod colligitur ex Virgilio Æneid."

" Pars mihi pacis erit dextram tetigisse tyrannis."
Et Lib 3.
" Ipse pater dextram Anchisis haud multa montus
Dat juveni, atque animum præsenti pignore firmat."

When Niquetius gives us some sketches of the expression of passion and of human characteristics, he paints very happily. Here is his description of an audacious man—

"Audacis viri figura :

" Os exertum, vultus horridus, aspera frons, supercilia arcuata, oblonga ; nasus longior ; dentes longi ; breve collum ; brachia longiora, quæ genua attingant ; pectus latum; humeri elevati; oculi cæsii, rubei, salientes; torvus aspectus."

Towards the end of the seventeenth century, another Italian writer, Ghiradelli, published a large volume on physiognomy, whose title is very characteristic of this inflated and bombastic period. Here is its exact arrangement—

" Cephalogy
Physiognomical.
Divided into ten half scores.
In which, in conformity with the documents of Aristotle,
And of other natural philosophers, with brief
discourse and careful observations, we
examine the physiognomies
Of one hundred human heads
Which have been engraved in this
Work.
After which, by signs and conjectures,
we demonstrate the different inclinations of men and women.
By Cornelio Ghiradelli, Bolognese,
The ingenious Vespertin Academician.
As many sonnets of divers excellent poets and academicians
have been added, in which the physiognomies previously cited are
gallantly described.
And some additions to each discourse of the indefatigable
Vespertin Academician.
At Bologna,
At the house of the Heirs of the Gospel,
Dozzi & Company,
1672."

The method employed by this ingenious and indefatigable academician in studying the human physiognomy is indeed very curious. He shows us a hundred human faces, drawn after life—very ill, it is true—and finely framed in a border ornamented with irregular sculpturings. Each is accompanied by a Latin distich, by a sonnet, and some remarks by the author. I shall quote, as an example, the distichs and sonnets which refer to a good and bad countenance. I will spare the reader Ghiradelli's prolix commentary.

We have before us a beautiful round face, which, according to the verses, should belong to a fair man. Here is the distich—

"Moribus ingenuis præclaraque indole credas,
Quem flavescenti videris esse coma."

And his lordship, Cesare Orrini, graciously offered to the author the following sonnet, which is read under the portrait—

"The fair locks with which nature has so splendidly adorned thy glorious brow, renders her other gifts so clear and manifest that thought can figure its lively image. And thou must have no fear shouldst thou be called upon to arm and fight, for a powerful and ever-present force is there to protect thee and to oppose itself to the influence of fatal stars.

"Kings bear crowns of glittering gold, and the idolizing, worshipping crowd bow before the perishable rays with which they shine resplendent.

" But thou, under thy golden hair, thou possessest a more truly glorious gift, so great a treasure of virtue that thou shalt rise above the sun and shalt attain to the heavens."

On page 17 our ingenious academician shows us a frightful snout, framed in the palm of a hand, as if between the hands of a barber about to shave it; and below this audacious distich, in the manner of a pillory label—

"Hispida cæsaries pigrum notat, atque timentem
Quemque mala videas calliditate frui."

Then comes the sonnet, which, this time, is the work of an Arcadian—that is to say, of the Marquis Errico Rossi, member of the Arcadian Academy of Bologna—

"Remove thyself from here—remove thyself afar; for to remain with thee is a misery for others; thy mouth forms words contrary to thy thought; thou art always ready to mingle lies with truth.

"Never hast thou dared to face a danger; never hast thou taken thought for others; thou fleest like the buck or the swift goat; thou avoidest the passer-by from afar.

"To every noble spirit, to every honest heart thou art as a brier, and as thorns: a coward, deceiver, idle and evil.

"I cannot deny that if thy lips are lying, thy hair, stiff and bristly, is truthful and reveals thy vices."

Despite this academic trifling Ghiradelli is a scholar and a sagacious observer; his book may be studied with interest by those who wish to know what the science of physiognomy was in Italy towards the end of the seventeenth century. He devoted to the nose two discourses which are really very curious. He says, among other things, "that the nose helps to manifest passion and contempt. Doctors have examined several proverbs upon the movements of the nose when a man manifests some passion. For example, when we want to make fun of and mock another we make a certain movement of the nose referred to in the proverb: *Eum adunco naso suspendere.* And when we wish to express contempt we make a sign with the nose, which means *Eum naso rejicere.* And when we see anything unpleasant done to another, we twitch back

the nostrils. When we get into a passion, the nostrils are dilated and the tip of the nose red."

Grattarola is an author who wrote in Latin upon Physiognomy, and who, in the order of time, precedes Ghiradelli. I have not been able to consult his work; but several passages of his, cited by the writers of the seventeenth century, do not testify to great originality.

Giovanni Ingegneri, bishop of Capo d'Istria, at the beginning of the same century, has left us a little treatise on *Natural Physiognomy.* He there gives sign of scanty erudition, and nearly always contents himself with presenting in aphorisms the solutions of cabalistic science. A few examples will suffice—

"A beard on a woman is a sign of little honesty."
"Excessive size of the brow is a sign of idleness."
"The smallness of the forehead indicates a choleric man."
"Very red eyes are the sign of a bad nature, inclined to cruelty."
"Bright eyes are the sign of wantonness."
"Those who are flat-nosed are very wanton."
"Men with curved noses are magnanimous."

Scipione Chiaramonti of Cesena is one of the best physiognomists. He published his works only one year before Ingegneri.* Blondo, Finella, and some others belong to the same school.

Plenty of authors, plenty of volumes, but little originality, and plenty of plagiarism! Who knows how often we might have been dragged though the same ruts if towards the middle of the last century Lavater had not appeared to inaugurate a new era for this order of studies. He is the true precursor of the positive science, and he serves as a link between the writers of the seventeenth century and of modern times.

The physician, Ciro Spontoni, also devoted a little book of astrology to the study of the brow. (*Metoposcopy by the Measure of the Lines of the Brow.* Venice, 1626.) In a sketch of the history of physiognomy it is necessary also to mention chiromancy, which has lasted into our own day as a last vestige of the magic of the middle ages. When we glance at the books on chiromancy we are astonished at the serious way in which imagination has struggled to read our character, our intelligence, and our destiny in the capricious lines of the hand. I will cite the following works as the most important:

La science curieuse ou traité de la chiromancie, etc., enriched with a great number of figures for the facility of the reader. Paris, 1665, 1 vol., 212 pages. Adrian Sicler. *Chiromancie royale nouvelle enriche de figures, de moralité et des observations de la cabale*, etc. Gio-Battista Dalla Porta. *Della Chirofisonomia.* Two books translated from a Latin manuscript of Pompeo Sarneili. Naples, 1677, 1 vol., 167 pages.

* *De conjectandis cujusque moribus et latentibus animi affectibus.*

Lavater was neither a physician nor a naturalist; he was a citizen of Zurich, and a minister of the Gospel. Poet and painter, with a feminine nature and an ardent love for mankind, he carried into everything the glowing enthusiasm, the sudden convictions, the mobility of ideas which form the joy and the torment of all men endowed with excessive sensibility. It is sufficient to look at the beautiful portrait of himself which he has given us in his works to perceive at once, and with a glance, all his defects and his rare qualities. Expansive, open to every enthusiasm, mobile, but always keeping within the limits of goodness and honesty, he has commented on his portrait in a short autobiography which is a jewel of sincerity and gracefulness. Lavater is one of those few men who carry their temperament and nerves into everything, who say all things to all. As soon too as we have read a single page of his great work we know and love him. Both in face and character he much resembles Fénelon. It is said that one day Madame de Staël, walking with him and some common friends, suddenly stopped and cried, "How our dear Lavater resembles Fénelon! These are his features, his air, his countenance. It is truly Fénelon, but Fénelon slightly Swiss (*un peu Suisse*)." He was also a poet, and left several epic poems, among others one which deserves comparison with Klopstock's *Messiah*, some religious dramas, canticles, sermons, theological writings, and some Swiss songs, which were very popular.

Lavater became a physiognomist, not by reading the authors who had preceded him, but by drawing with his rapid pencil faces which pleased or displeased him, and by preserving his drawings with care. By dint of drawing and collecting, he found himself in possession of a considerable number of observations which, united almost without order and with no scholastic rule, crystalized as though spontaneously into a great encyclopædia enriched with five or six hundred plates, and which he called one fine day, *The Physiognomical Bible.*

The first edition appeared in folio in 1772; to-day very rare, it is still the best, because the figures were executed under the eyes of the author himself. After this first German edition there were others in French, in English, and in other languages. I possess that which was printed at the Hague from 1781 to 1803. It was begun by the author, but the fourth volume appeared after his death under the care of his son, a doctor of medicine. We recognize all the humanitarian and religious fervor of the author even in the title of this immortal work—*Essay on Physiognomy, destined to make man known and loved.*

The author is in fact inspired by love and by faith; transported by the liveliness of his feelings, he bursts every moment into hymns of admiration: now for the mouth which is so interesting a part of the face; now for the God who has made man so beautiful; now for the woman who is the enchantment of life; in a word, for all that presents itself to

his loving eyes. It is related that in a long illness, the consequence of a wound which he had received in the attack on Zurich by the French, weakness caused him to fall into hallucinations and religious ecstasies. He imagined himself to be the Apostle St. John, and present at the mysteries of the Apocalypse.

In Lavater there is no longer a trace of judicial astrology; nor is there servile imitation of the ancient writers, of whom besides he knew little. But the guesses of an individual man take the place of a scientific examination conducted by positive and rational methods. Feeling is substituted always and everywhere for science. Thence come the imperfections of this beautiful work, which remains a grandiose monument of human genius, but which does not supply a firm basis on which to found other columns and other edifices. Admiration for, and love of, men are not enough to replace scientific observation; and the genius of Lavater does not suffice to atone for his complete ignorance in anatomy and in natural history.

Two anecdotes will serve better than anything else to show the weakness of his theory.

One day a stranger presented himself to him.

"M. Lavater," said he, "I have just arrived. Look at me well, for I have taken the journey from Paris to Zurich to see you, and to submit my countenance to your examination. Guess who I am!"

"I have already looked at you attentively. You have many characteristic features. To begin, you write. . . . . You probably devote yourself professionally to literary work . . . . Yes, certainly, you are a man of letters."

"True, but of what sort?"

"I do not know. . . Yet it appears to me that you are a philosopher . . . that you know how to seize the ridiculous side of things . . . . that you have courage. . . . originality . . . . much wit. You might very well be the author of the *Tableau de Paris*, which I have just finished reading."

It was in fact Mercier.

When the mask of Mirabeau was sent to Lavater he guessed the great revolutionist. "One recognizes at once," he said, "the man of terrible energy, unconquerable in his audacity, inexhaustible in his resources, resolute, haughty," etc.

But here is the reverse of the medal:—

One day his friend Zimmermann sent to him a very accentuated profile, with a letter written so as to greatly pique his curiosity. Lavater, who was wanting and expecting a portrait of Herder, imagined that this profile was that of the great German philosopher, and went into ecstasies over the intellectual and poetical qualities of the man to whom it belonged.

This man was, on the contrary, an assassin executed at Hanover.

That which happened to Lavater will always happen to those who take physiognomy for an exact science, and who confound the expression with the anatomy of features, as he always did without himself being aware of it. Yet the illustrious pastor of Zurich marks a new epoch in our studies, and his work will always be an inexhaustible mine of information for the artist and the psychologist. We may say of him as he said of Raphael—

"When I wish to intoxicate myself with admiration for the greatness of the works of God, I have only to present to myself in imagination the face of Raphael. He will always be for me an apostolic man; I mean that he is relatively to other painters what the apostles were relatively to other men."

Lavater was the apostle of scientific physiognomy, and although Lichtenberg wrote against him the celebrated satire of the Physiognomy of tails, he will always remain one of the most sympathetic figures, the most beloved, the most brilliant, in the history of physiological science.

Lebrun, the celebrated painter of Louis XIV., wrote on physiognomy,* but in an academical manner. The types of the principal emotions which he has left us are mannered: they are caricatures and not studies after life, as we shall have several occasions to prove during the course of this book.

Among the artists who have studied the physiognomy is also the Italian, De Rubeis, a gentleman of Udina, who published at Paris (1809) a book on portraits and on the best way of seizing faces.† He was a penetrating observer, and should be studied more than he is to-day.

The real science begins with Camper. This great anatomist gave his name to the famous facial angle which, to our own time, has served as a criterion and a measure to determine the rank of the human face, and of the snout of animals in the morphological series. Topinard‡ and myself have published some critical studies on the value of this criterion; but the facial angle of Camper will always be considered one of the most ingenious discoveries which have been made in this order of research. Camper in his work§ began to sturdy the human countenance in different races, and traced the broad lines of an evolution

* Lebrun, *Conférences sur l'expression des différents caractercs des passions.* Paris, 1667, in 4to. These lectures were reprinted in the edition of Lavater published by Moreau, 1820. See also by the same author, *Expressions des passions de l'âme*, in folio. Published by A. Suntach.

† G. Battista de Rubeis, *De'retratti ossia trattalo per cogliere le fisonomie.* Paris, 1809. Printed in Italian and in French.

‡ Topinard, *Etude sur Pierre Camper et sur l'angle facial dit de Camper.* Revue d'anthropologie, t. ii. Paris, 1871.—*Des Diverses espèces* de *prognathisme*, *obid.* t. i. and t. iv.—Mantegazza, *Dêi caratteri gerarchici del cranio umano.* Archivio per l'antrop. e l'Etnol. Florence, 1876, t. ii. p. 547.

§ Camper, *Discours sur le moyen de rêpresenter les diverses passions*, etc.—*Dissertation physique sur les différences rêelles que prêsentent les raits du visage.* Utrecht, 1791. Œuvres posthumes.

of forms, while criticising with very close reasoning the brilliant superficiality of Buffon. In the third chapter of the second of the works quoted in the note he gives *physical observations on the difference of the features of the face, considered in profile: as, the heads of apes, of ourang-outangs, of negroes and other peoples, tracing up to the antique heads.* "You will be astonished," he says, "to find among my first plates two heads of apes, then one of a negro, and then one of a camel." He opposes the opinion of some learned men who had admitted that negroes might be the offspring of the union of white women with apes. He says this is not the place to demonstrate the absurdity of the assertion; but, however, he compares apes, negroes, and antique statues. This comparison appeared to him very bold: he made it, however, and theological prejudice did not prevent him from tracing the first lines of the evolution of human forms.

Charles Bell, a distinguished physiologist, published in 1806 the first edition of his work* on the anatomy and philosophy of expression, an epoch-making work in the history of expression. Lemoine † was right when he said "Charles Bell's book should be studied by every one who essays to make the face of man speak, by philosophers as well as artists."

The German, Engel, published towards the end of last century a good book (*Letters on Expression*), which has been translated into Italian by Rasori, in which the diverse movements of the face and of the body are studied with care and with interest.

In 1839 Dr. Burgess ‡ studied the causes of the blushing which is produced under the influence of different emotions; in 1862 Duchenne published two editions of his treatise on the mechanism of the countenance § ; but the importance of his observations and of his theories seem to me to have been somewhat exaggerated by Darwin. ‖ In my *Physiology of Pain* I have tried to reduce the ardor of physiologists to a more judicious moderation.

The great French anatomist, Gratiolet, gave at the Sorbonne a public course on expression, which was published in 1865, after the death of the author.¶ He there thus summarizes the conception which he had formed of expression—

"It results from all the facts which I have recalled, that the senses, the imagination and thought itself, elevated, abstract as they are supposed to be, cannot be exercised without awakening a correlative feeling, and that this feeling translates

* Charles Bell, *Anatomy and Philosophy of Expression*, 1806.

† Albert Lemoine, *De la Physionomie et de la parole.* Paris, 1865, p. 101.

‡ Burgess, *The Physiology or Mechanism of Blushing*, 1839.

§ Duchenne, *Mecanisme de la physiognomie humaine ou analyse électro-physiologique de l'expression des passions.* Paris, 1876.

‖ Darwin, *The Expression of the Emotions in Man and Animals.* London, 1872, p. 5.

¶ Gratiolet, *De la physiognomie et des mouvements d'expression*, 1865.

itself immediately, sympathetically, symbolically, or metaphysically in all the spheres of the exterior organs, which tell all, according to their own mode of action, as if each had been directly affected."

The germ of a great truth lurks in this theory, but it is almost lost behind a veil woven of metaphysical nebulosities. I hope that the reader will find more delight in my chapter on the alphabet of expression.

Piderit published, in 1859, an essay on expression, and in 1867, a scientific treatise on expression and on physiognomy.* Bain, Herbert Spencer, and other psychologists of the positive school have collected some valuable observations on some of the expressions of the human countenance.

But the honor was reserved for Darwin of studying expression by a really new method, and to open up a large field for purposes of comparison, by seeking for the first lineaments of expression in the animals which most nearly resemble us.

The great anatomists and physiologists who preceded him had only touched one side of the problem ; they had only concerned themselves with expression in its relation to art and the æsthetic. He, on the contrary, with his wide and comprehensive mind, traced the general laws which govern expression in the whole animal kingdom. His book is one of the most splendid monuments erected by his genius ; and one may say without exaggeration, that expression, in so far as it is a special branch of comparative biology, asserted itself as a new science in the work published only in 1872, to which we shall have to recur more than once.

Darwin studied the expression of the principal emotions in animals, in children, in adults. He put comprehensive questions to travellers, to missionaries, to all his correspondents in various parts of the world. Thus he amassed an extraordinary quantity of new facts ; then he examined them as with a magnifying glass, submitting them to the evolutionist theory, that he might attempt to discern their mutual relation—the relation of cause to effect. We may differ in opinion from him upon some particular points, we may reject some of his explanations as too rash, but we must always admire the width of the horizon which was opened to us by the publication of his book.

Scarcely more than two centuries elapsed between the work of Dalla Porta and that of Darwin, and yet what a gulf between the two methods! We seem to be reading books written in two different languages! On one side, divination, cabalism, some poor thoughts floating in an ocean of hazardous statements—fortuitous coincidences. On the other, few statements, many doubts ; but what certainty of method, how open the look into the future! There we have a fantastical world, where we can seize nothing, because all is clouded and phantom-like ;

* Piderit, *Wissenschaftliches System der Mimik und Physiognomonik*, 1867.

here we step on the solid earth of nature, and we enter the true path of science. We shall perhaps have to move onwards during the ages; but we shall never have to return beyond this point and strike a new path.

Still the new physiognomy could not satisfy the crowd which had been so long gorged with amusing fooleries and graceful enigmas. Even in this century, books have continued to be published, which, with every appearance of seriousness, while claiming to be scientific works, preserve a strong odor of judicial astrology, or, at least, of sentimental physiognomy.

I will cite as a model of the kind the *Traité complet de physiognomonie*, by Lepelletier de la Sarthe, where vain pomp of form vies with emptiness of content. And the author was a doctor.

It is almost the same thing with the two manuals which the celebrated *Encyclopédie Roret* has devoted to the study of physiognomy—the *Nouveau Manuel du Physiognomiste et du phrénologiste*, Paris, 1838, and the *Physiognomiste aes Dames*, Paris, 1843. The first of these volumes begins with a lie, for it is given as a posthumous work of Lavater and Professor Chaussier; the second is offered more modestly, as written by an amateur.

Thoré published at Brussels, in 1837, a little Dictionary of Phrenology and Physiognomy, the erudition of which is drawn at hazard pretty well universally, now from old, now from modern times; but on the whole it is not a contemptible work, and good articles are found in it.

We must distinguish from these compilations some Italian works. Povi Polli, whom we lost recently, had published a thesis, entitled *Essay on physiognomy and pathognomy* (Milan, 1837, with six plates). This book, it is true, is completely forgotten to-day and unknown beyond the Alps; but it does not merit this oblivion. It abounds with excellent observations, especially in the part devoted to the physiognomy of the sick, and it is written with juvenile ardor.

Filippo Cardona, in his volume, *Della Fisonomia* (Ancone, 1863), commits the fault of writing in a solemn style, which smells mouldy and rancid a mile off, and which is especially out of place in a scientific book. This book has also the fault of being badly constructed, without order and unscientifically; but it is full of wholesome erudition, and here and there sparkles with wit and humor.

Mastriani has treated more or less directly of physiognomy in two works, *Notomia Morale* (Naples, 1871, 2d edition) and *L'uomo dinanzi alla Corte d'Assise.*

In this historical sketch I by no means claim to have cited all the authors who have written on physiognomy, but only to have sketched in broad lines the evolution of this science which, after wandering in the heavens and on the earth, has to-day recently returned to its point of departure—that is to say, to the pure sources of nature.

To-day we must clearly distinguish the expressive movements of the muscles from features, the anatomy, and forms. We have thus on one side a study of the human countenance, which is associated with anatomy, with anthropology, and, for its application, with all the plastic sciences ; and on the other side, a study of expression, and of expression, in relation to psychology, to comparative ethnology, and the applications of which interest in turn painter, sculptor and actor.

My book proposes modestly to restore to anthropology and to psychology that which belongs to either by right, and to make known the positive documents which we possess to-day on the human countenance and on expression. I shall esteem myself happy if I am able to enrich by my observations the treasury of facts secured to science.

CHAPTER II.

THE HUMAN FACE.

Soon after birth, when our eyes have already the power of sight, but do not yet perceive, the first object which presents itself to the yet virgin pupil is a human face. When in our last hour our gaze wanders in the supreme anguish of the death agony, our eyes most greedily seek a friendly face on which to rest, ere they are closed forever. The human face, on which can be painted an immense love or an eternal hatred, a sudden sympathy, or an invincible repugnance, is for us the most interesting thing in the universe. All the libraries in the world would not suffice to hold the thoughts and the feelings which the human face has awakened in man since this poor intelligent biped has trodden the soil of our planet. Religion has made it a temple of prejudices and of adoration ; there justice has sought the trace of crimes ; thence love has gathered its sweetest pleasures ; finally, science has found there the origin of races, the expression of diseases and of passions, and has there measured the energy of thought. The dictionaries of our languages have gathered together all the fruits of our aspirations, our studies, and our researches, superficial or profound. Art has represented it in all its infinite variety and mobility of expression ; the first artist, who with flint style sought to trace some lines on the bone of a reindeer or a stag's horn, produced with a circle and three or four points a coarse sketch of a human face.

This universal cult of the human face is fully justified. In it we find assembled, in a small space, all the organs of the five senses, nerves sufficiently delicate, muscles sufficiently mobile to form one of the most expressive pictures of human nature. Without words our face expresses joy and grief, love and hatred, contempt and adoration, cruelty and compassion, delirium and poetry, hope and fear, volup-

tuousness and bashfulness, every desire and every fear, all the multiform life which issues each instant from the supreme organ—the brain.

Many centuries before science had collected the materials of our observations, the necessities of social life had taught us to observe the human face, to read there the thoughts of the mind and the feelings of the heart. Thence was born an empirical art without rules and without method, which was transmitted from father to son, the inhertance of a rough experience.

Some anecdotes, collected by Lavater, may give an idea of this physiognomical art, which in different degrees is possessed by all men born under the sun.

The father of a young virtuous man, who was about to undertake a distant journey, said to him as he bade farewell: "All that I ask of you, my son, is to bring me back the same face."

"At what do you value my face?" a stranger asked of a physiognomist. The latter naturally replied that it was not an easy thing to value.—"It is worth 1,500 crowns," replied the other; "for this sum has just been lent me on my face, by one who did not know me."

A friend of the Count T——, who lived at W——, one day entered his house with a face which he sought to make gay and serene. After having finished the business which had brought him, he wished to retire. "I shall not let you go out," said the count. "That is a strange idea," replied the friend; "it is very necessary that I should go." "You will not leave my room," replied the count, locking the door. "In Heaven's name, why do you act thus?" Because I read in your face that you are meditating a crime." "Who? I? How can you believe me capable?" "You are meditating an assassination, or I understand nothing." The other grew pale, and confessed that the count had guessed rightly. He surrendered to the latter a pistol which he was keeping hidden, and told him a sad story. The count was generous enough to draw his friend from the situation which was about to lead him into crime.

However, all that the world generally knows of the human face is but a confused mass of vague notions for which language could with difficulty find expression.

Try to describe to some one the anatomical or expressive features of a face which you know well; you will see how difficult is the task. And yet to have seen a man enables us to distinguish him from the millions of other men who inhabit the globe. This is because to see and to render an account of what one has seen are two very different things. In looking at a face we note rapidly, by a sort of inner shorthand, the most expressive and the most characteristic features. We keep this shorthand portrait in our minds, and thanks to it we distinguish each other, and it suffices us for the ordinary purposes of life.

Sometimes we only remark a single feature, the most salient, and from this single feature we derive a name. The whites give the name of black to all the people of Africa and Melanesia, because a complexion so different from their own immediately strikes their attention. In the same manner we speak of a one-eyed man, a long-nosed man, a thick-lipped man; we speak of stupid, of libidinous, of beautiful, or ugly faces, although, in addition to these characters, faces present many others which complete their individuality.

All parts of the face are not equally important in distinguishing men one from another. De Rubeis has demonstrated this in a few words with complete satisfaction in his *Treatise on the Reproduction of the Face*, which we have already quoted in our first chapter.

There are two distinctive characters of the face—the one essential, the second accessory. The following hypotheses will make clear what constitute the first.

"You have a friend whom you see very often, who is a frequenter of your house. Let us suppose that he has concealed part of his face with a mask, so that the lower lip, the forehead, and half of the cheeks are hidden. The rest—that is to say, the eyes, the nose, and the upper lip—remains uncovered. Although the greater part of the face is thus hidden, the face is at once recognized, because the distinctive characters are visible.

"On the other hand let this friend remove his mask; he has his head arranged in the ordinary way, and he only puts before his face a little black mask, which reaches from the middle of the forehead to the middle of the nose, covering the space occupied by the eye orbits. Then his friends no longer recognize him, especially if he has changed the shape and color of his ordinary clothes.

"Thus the part of the face which reaches from the bone of the nose to the middle of the forehead, and which is situated between the two temples, is the *essential distinctive character* of the face, and the part which comprises the cheek bones and the bottom of the nose is the *accessory distinctive character*."

The mistake of ordinary observers is not only to take two or three characteristics as a shorthand portrait of all faces, but also to confuse the form or anatomy with a very different thing—movement or expression. This second capital error has slipped into every treatise on physiognomy. It is only quite recently that anatomy has been separated from expression, and that the two things have been studied apart. We shall faithfully respect this fundamental distinction in this work.

One man has little short-sighted eyes, a long and crooked nose, a big mouth awry. Another has large beautiful eyes, a Grecian nose, an admirable mouth. Still it may be that both laugh alike, and express love and hatred in the same manner. They differ in their anatomy; they resemble each other in their physiology or in expression.

We do not wish to give here an anatomical or an æsthetic treatise on the human face; we will only say so much as it is necessary to know before entering on the study of expression, which is the most important and the most original part of our work. Decomposing by analysis all the elements which we meet in a living human face, without submitting it to the analytical operation accomplished with the scalpel, we can prepare the following list:

ANATOMICAL AND EXPRESSIVE ELEMENTS OF THE HUMAN FACE.

Size of Face and skull and their mutual proportions.
Length and width of face and their relative proportions.
Situation of the different parts of the face.
General form.
Color.
Forehead.
Eyes, eyebrows, eyelids, and eyelashes.
Nose.
Mouth.
Chin.
Ears.
Teeth.
Hair and Beard.
Spots.
Wrinkles.
Different or expressive movements.

Each of these elements is decomposed in its turn into secondary elements, as we shall see in the following chapters.

From all these elements taken together we can make certain determinations as to the successive epochs or accidents of life.

Sex.
Age.
Health or disease.
Diverse alterations, traumatic or pathological, suffered in the course of life.
Race and paternity.
Different sorts of beauty.
Moral character.
Position in intellectual rank.

If by means of a more precise and scientific formula we desire to reduce the possible judgments on the human face to a small number, they can be given as five: the *physiological* verdict, the *ethnological*, the *æsthetic*, the *moral*, and the *intellectual*. The ethnological and æsthetic verdicts are founded almost exclusively on anatomical characters; therefore we shall speak of them briefly in the fifth chapter of the first part. On the contrary, the physiological, moral, and intellectual depend on expression more than on anatomy; therefore we speak of them in the second part.

In theoretical works on the art of drawing, certain rules are found which teach approximately the relative average proportions of a human face which is beautiful, or at least regular. The ancients drew these rules from Vitruvius, the moderns from Albert Dürer. After Dürer the works of classical antiquity were studied, and from them it was sought to deduce the æsthetic laws of human morphology. Many artists, in preparing the canvas on which to paint a portrait, begin by tracing an oval, and inscribing in this a cross. Then they divide the height into four parts, each of which is equal to the length of the nose;

the width into five, each of which is the width of the eye. But Camper remarks with much justice that proportions vary infinitely between one individual and another, and that these little differences are precisely that which constitutes originality.

As we are not here writing a book on art, but a book on anthropology and psychology, a few words on the general form of the face will be enough. One of the most important characters of a human face is the possession or non-possession of prominent jaws, thick lips, and receding forehead. In the first case the face is said to be *prognathous;* it is the type met with in negroes, the Australians, and some Papuans. In the second case the face is *orthognathous;* this is the face of all the higher races. Isidore Geoffroy Saint-Hilaire gave the name of *eurygnathous* to a third type where the cheek-bones are very prominent, and which is found in the Chinese, the Japanese, and in the different branches of the Mongolian and Turanian races. This classification relates rather to racial progression than to beauty, because it corresponds to a particular development of the brain and of the face. If only the middle part of the face is taken into consideration there are two principal forms: the one developed from behind forwards and rising in the median line; the other developing transversely, in which the sides are prominent and the middle flattened. The first form is found among Europeans, the second among negroes, and still more among Mongols.

There are long and there are short faces. The first are more frequent among the Aryans and the Semites, the second among the Mongols. To our ideas the perfect face should form a beautiful oval. We shall enter more into details on the proportions of the face when we treat, in the following chapters, of the features considered separately. The color of the skin is one of the most striking and general features which impress us in a human face, and thence we judge as to race, sex, age, and health. The color of the skin arises from the pigment deposited in it, or the manner in which the blood is distributed, or certain characters of the epithelium, and of the deeper tissues which give its particular hue.

Broca, in the *Anthropological Instructions* published by the Anthropological Society of Paris, attempted to reduce to a small number of elementary hues all the colorations of the skin which he made correspond to as many numbers. The same table serves for the hair. All those who have wished to make use of this table of colorations to define the color of a human skin have experienced great difficulties. For my part I have tried to apply it in the study of the Lapps, and I have had to give it up completely. The principal reason is that the skin is much more transparent than the paper on which Broca has spread his tints. Two colorations cannot be compared, one of which arises entirely from reflection, and the other is in part transmitted and

in part reflected. Add to that subjective errors, which in the case of colors is not slight.

The table of the Anthropological Society of Paris is in appearance scientific and precise: in reality it is as inexact as the old division into white, red, yellow, and black, according to which the whites would belong to Europe, the red to America, the yellow to Asia, and the black to Africa. Such a method is to cut the Gordian knot, like Alexander; not to untie it. I believe that we arrive very near to the truth in admitting for the human skin three tints—white, black and the color of dried bean (*fave secche*).

White skin is met with among nearly all the Aryans and Semites, and among many Polynesians, who are neither Malays nor Papuans, and have probably a common origin with ourselves. The negroes, the Papuans, the Australians, some tribes of India, and the Negritoes, have black skin. All other peoples of the earth are of a dried bean color. If any one will take the trouble to gather beans of different sorts, and of different degrees of dryness, he will have all the tints of the so-called yellow and red races, who in fact present now the color of raw clay, now of baked clay, now of *café au lait*, finally of all the varieties of chocolate.

It may seem at first sight an empirical and rough method of procedure when we compare the color of the human skin to that of a fruit or a food; but in fact, since we have to deal with subjective notions, a much more precise idea of a color is conveyed by saying that it resembles that of dried beans than by denoting it by the term olive-colored, earth-brown, or blackish yellow. Observe also that under every word there is, as its etymology indicates, a comparison with objects. For the rest I should like to point out the evidence for my statement. Several travellers have spoken of the color of the skin of the Negritoes, among others Professor Semper and Dr. Crawford. The former said they are *deep copper brown*, the latter that they are of the color of *over-burned coffee*. Any one who is acquainted with coffee will have a much clearer idea in the second than in the first case.

In the coloring of the human skin there is one thing which has not attracted sufficient attention from ethnologists hitherto. A single adjective, however precisely and happily chosen, cannot characterize this coloration exactly, because it results from the superposition of two colors, and most frequently from a sort of black or very dark brown dust deposited on a ground of dried bean. I have studied this aspect of the skin in the Tobas, the Mocovis, and the Matacos of South America; but, after all I have collected from the lips of travellers, I believe that we may add to these many peoples who vary between black and white without being one or the other.

CHAPTER III.

THE FEATURES OF THE HUMAN FACE.

THE FOREHEAD—THE EYES, EYEBROWS, AND EYELASHES—THE NOSE—THE MOUTH—THE CHIN—THE CHEEKS—THE EARS—THE TEETH.

HAVING studied the human face in its general form and character, we have now to proceed to the analysis of its features, and examine them singly.

If we consult ancient and modern authors we shall find plenty of physiognomical guesses, mingled with a very scanty observation of facts—a singular contrast, which well attests the poverty of science and the fertility of human invention. The most obscure physiognomist offers us a hundred formulæ, each more uncertain than the other, for estimating character and intelligence from the features of the face; while serious anthropologists have scarcely touched on the subject, occupied as they have been with the skull, which seemed to them to contain the most profound secrets of human nature. Between the physiognomists and the anthropologists are ranged the artists, who have studied the face from the æsthetic point of view, and have formulated their opinions according to personal taste or the tendency of the school to which they belonged.

The Forehead.—After the eye the forehead is the most faithful interpreter of the intelligence. Many centuries before there was any study of morphological rank according to the evolutionist scale, the wide and lofty brow was universally considered beautiful, the low and receding brow, ugly. This appreciation absolutely conformed to nature, since the former was peculiar to the more intelligent races; while the latter characterized the inferior races, and an intelligence of a low order. In addition to its proportions relatively to the other features of the face, the forehead gives us other secondary characters which vary with racial rank in the human family, with sex, or with different periods of life. The large development of the supercilliary arch denotes an inferior rank in the order of races, while it is at the same time a distinctive mark of the male sex.*

A narrow and receding forehead, with enormous superciliary arches, unites the lowest racial characters, and is found especially among the inferior types of the Papuan races. In women (at least among the higher races) the superciliary arches are but slightly marked, or completely absent; the forehead is narrow, with very marked protuberances, these being also characteristic of the heads of children.

*Mantegazza, *Dei caratteri sessuali del cranio umano.* Archivio per l'Antrop., vol. ii. p. 11.—*Studii antropologici sulla Nuova Guinea.* Archivio per l'Antrop., vol. vii. p. 137.

Another very constant type of feminine forehead is one which rises vertically and inclines abruptly towards the crown, with a very accentuated angle. On the other hand, in the male head the curve is an unbroken line from forehead to occiput. The forehead of the child is above all distinguished by the large development of protuberances.

The anthropologists have little beyond this to tell us of this feature; the artists say still less. Among them we will only quote the great Leonardo, who distinguished between three types of brow—the flat, the concave, and the convex—and our own Cardona, who completed this distinction in his commentaries. He tells us that the first type, peculiar to ruddy faces, was for the commentators of Aristotle and for Porta an indication of an excellent natural disposition, and that the second is not a great honor to its possessor more especially when little developed in height and towards the crown. The third, when neither brazen or insinuating, testifies to a harmony of faculties, and frequently to musical ability.*

The lucubrations of the physiognomists on the value of different types of brow present a contrast by their abundance. Here is an example of them :

"Those with large brows are cowardly and timid, like oxen who also have large brows. Those with small foreheads are very ignorant, by their resemblance to pigs. But by small I mean narrow, for the pigs to which Aristotle alludes in his *Physiognomy* have very narrow foreheads.

"A brow developed in length indicates good sense and plenty of faculty for the sciences.

"The square forehead, of medium proportions relatively to the face, denotes a magnanimous man by its resemblance to the brow of the lion.

"Those with rounded foreheads are passionate, and it is a sign that they are inflated with presumption.

"Those with rounded and lofty foreheads are stupid, because they resemble the ass.

"The forehead which is not flat betokens the sagacious man, because he resembles the dog.

"'The smooth forehead denotes a quarrelsome man,' said Rasi. 'I believe by analogy with the dog, who is quarrelsome, and has no wrinkles in his forehead.'"

And so on for a number of pages. The author reviews in turn foreheads which are straight, then neither smooth nor rugged, calm, dreamy, medium, calm and dreamy, lofty, low, austere, sad, joyful, etc., and for nearly each one he gives us a human and an animal face to demonstrate the truth of his parallels and his opinions. †

Niquetius believed the forehead to be the door of the soul and the

* Filippo Cardona, *Della Fisonomia*. Ancona, 1863, p. 174.

† Gio. Battista Dalla Porta, *Della Fisonomia dell' huomo*. Padova, 1627.

seat of modesty, *animi janua, pudoris sedes*, and with his accustomed erudition he quotes Cicero, *De petitione Consulatus ;*
and Martial :

. . . "*perfricuit frontem posuitque pudorem ;*"

and Isaiah :

"*Scivi enim quia durus es, et nervus tuus ferreus et frons tua aerea ;*"

and Ecclesiasticus :

"*Animæ irreverenti et infrunitæ ne tradas me ;*"

and Terence :

"*Mitte jam isthæe, exporrige frontem ;*"

and Plautus :

"*Ego te porrectiore fronte volo mecum loqui ;*"

and finally Pliny :

"*Est enim frons tristitiæ, hilaritatis, clementiæ et severitatis index: nullibi magis quam in oculis et fronte pudor conspicitur.*"*

The quotations of the learned Jesuit show us once more that orators, poets, and prophets placed the principal seat of thought in the anterior lobes, long before a cerebral physiology had been thought of.

Mgr. Giovanni Ingegneri, bishop of Capo d'Istria, proceeds to diagnoses of the subject of the forehead, which are amusingly subtle. For example, a brow which is neither smooth nor rugged is a sign that a man loves justice.†

The Bolognese Ghiradelli devotes the *Deca seconda* of his work ‡ to the study of the brow, *which is the most secret and noble part of the physiognomy.* He is even still more prolific of quotations and cabalistic lucubrations than the Jesuit Niquetius. To give an idea of the pompous style, so resonant of this seventeenth century, with which he discourses of the forehead, I will cite a single period.

"Among all the parts of our body the forehead shows itself the most docile in revealing the inner affections of the soul. At the foot of the brow the noble flame of the eyes is constantly burning ; by so much the more easily this oracle of the heart is inflamed by curiosity and external knowledge, by so much the more readily may be read there the resolutions decreed in the council of Nature."

Lavater might well say that his predecessors in the study of the forehead had but copied each other, and that they had fallen into vague contradictory arguments, into rigid conclusions destitute of sense. He affirms that he studied the forehead more than any part of the face, because he believed it to be the most important and most characteristic ; but he too attempted to compel nature to reply under the constraint of torture, and his laws are guesses which severe science repudiates. Judge if my opinion is too harsh.

* R. P. Honorati Nicquetii, etc., *Physiognomia humana.* Lugduni, 1648, p. 176.
† *Fisnomia naturale di Monsignor Giovanni Ingegneri.* Padova, 1626, p. 19.
‡ Cornelio Ghiradelli, *Cefalogia Fisnomica.* Bologna, 1672, p. 78.

1. The forehead is elongated in proportion as the mind is destitute of energy and elasticity.

2. In proportion as it is narrow, short, and squat the character is concentrated, firm and solid.

3. Rounded contours, with no angles, discover gentleness and flexibility of character. But this, on the contrary, will have firmness and rigidity as the contours are rectilineal.

4. Absolute perpendicularity, from the hair to the eyebrows, is a sign of complete lack of intelligence.

5. A perpendicular form, which slopes away insensibly above, announces a reflective mind, profound and decisive thought.

Let us stop here. The ancients, on looking at a forehead, could tell us all sorts of beautiful things. We no longer know anything, and in the first lines which we wrote on this part of the face was collected well-nigh all the positive knowledge which we possess. It is probable that among the hosts of opinions formed by the old physiognomists, and especially by Lavater, who was a good observer, there lurks some amount of truth. Posterity will be able to discover it by an analytical work of which we are not capable to-day. But it would be labor lost to weary ourselves now with digging into the scoria of the past, when the rich veins of positive psychology are opening up before our delighted eyes.

The Eye.—The eye is so important a part of the face that a complete monograph on this organ would comprise the half of all psychology and the science of expression. But in this first part we must only speak of the anatomical history of the eyes, and not of their expression.

The most striking characters of the eye are its expression, form, position, color, and the special arrangement of the eyebrows and eyelashes. According to the total effect of these characters we judge whether the eye is beautiful, ugly, eloquent, stupid, expressive, etc.

The size of the eye, as we empirically appreciate it on a first glance and without measurements, does not only depend on the volume of the eyeball, but on the extent to which the opening of the lids allows a greater or less portion of it to be seen.

The eye which is rather large without being prominent is to us the ideal of perfection; a small eye seems ugly to us. This verdict is rational, for the eye being one of the most expressive organs, there is in its power of expression an element of quantity which is not without effect.

Generally the Aryans, the Semites, and many negroes have large eyes; Mongols and many Malays have small eyes.

The form of the eye depends partly on the greater or less convexity of the cornea, but still more on the shape of the orbit, on that of the eyelids, and on the extent to which these open. We have then to con-

sider round eyes, prominent, almond-shaped, horizontal, or oblique eyes, either sloping up to the nose or to the temples.

In the Aryan and Semitic races, and among the white Polynesians, the eyes are almond-shaped, with the outer extremity very pointed. This forms in our opinion one of the principal beauties of the Semitic women and of those who have a little Semitic blood in their veins, as the Spaniards of Andalusia. This form of eye is also much appreciated in the East, since it is the practice to simulate an elongation of the transverse opening of the eyelids by the use of sulphur of antimony.

Eyes slanting downwards, from without inwards, form one of the characteristics of the Mongols and of some American races. This obliquity is extremely pronounced among the Esquimaux, Buriates, etc. Sometimes among us just the contrary prevails, and the outer angle of the eye is lower than the inner. When this character is accompanied by other æsthetic elements it may constitute a rare and extraordinary beauty, as may be seen in the case of Empress Eugenie.

Eyes may be ugly if they are too near or to far apart. In the first case, especially, the expression may assume a bestial and very repulsive character.

They may also be very unsightly if they are level with the head, as in some negroes, or too prominent, as in some short-sighted people.

The excessive sunkenness of the eyes in their orbits may depend either on the very overhanging roofs of the latter, or on great emaciation. In either case they may give a ferocious or a sad character.

The color of the eyes varies greatly, both among different races and among different individuals of the same race. We generally define it in a summary fashion by a single word, although in reality it is constituted by the various hues of the iris, and by the influence, greater or less, of that of the pupil, which is always black. The iris includes two concentric zones of different color, and nearly always presents some striations of a third hue. Hence the difficulty of reducing all the colors of eyes to a small number of types. We call eyes which are deep chestnut black ; but such a thing as a really black iris does not exist anywhere.

We may establish a sufficiently rough classification by distinguishing between gray, blue, green, and brown. The Anthropological Society of Paris have admitted for each of these fundamental colors five shades, which they have figured in a table, intercalated in the little volume of their *Instructions Anthropologiques*. But the employment of this table is beset with enormous difficulties, since the terms of comparison chosen by Broca are inexact. In the table the colors are opaque—that is to say, the tints are reflected by the white paper on which they are spread. The color of the eye, on the contrary, is the result at once of reflected and of transmitted rays. Thus practice has shown me that it is better to designate the color of the eye by the terms

in use in ordinary language. To arrive approximately at a scientific classification we ought to have a series of artificial glass-eyes, like those adapted to the one-eyed to conceal their infirmity.

While studying with my friend Sommier the color of the eyes of the Lapps, I became convinced of these difficulties, and was obliged to give up using the table of the Anthropological Society. We were able to distinguish in the iris of the Lapps at least fourteen different and graduated shades. Here is the list :

	Men.	Women.
Dark chestnut brown	2	4
Chestnut brown	8	6
Light chestnut brown	10	4
Turquoise blue	12	4
Light Turquoise blue	2	—
Azure gray	13	—
Light sky blue	1	1
Gray	3	4
Gray brown	7	5
Light gray	2	—
Light azure gray	1	1
Yellowish gray	2	—
Greenish gray	2	—
Green	1	—
Totals	66	29

Gray, green, or blue eyes are nearly always associated with the hair and complexion belonging to the blonde type ; while brown or dark eyes generally go with the brunette type. Sometimes, however, blue eyes are found with black hair, or black eyes with fair hair. These two contrasts are very pleasing, because rarity is an element which exercises great influence in our æsthetic judgments.

Sometimes it happens, but very rarely, that the two eyes may be of different colors. Every one knows the red color of the eyes of the albinos ; it arises because, from a deficiency of pigment, the iris presents the coloration of the blood vessels.

The subjective element prevails in our estimation, whether favorable or unfavorable, of the color of the eyes, and in this respect there are many national and individual tastes. I shall never forget the eloquence with which a very learned Norwegian philologist and ethnologist expressed to me his enthusiasm for light eyes (he meant gray, light, or sky blue), and his contempt for dark eyes. The former, he said, are expressive ; they can translate the emotions : black eyes, on the contrary express nothing ; they are but *pieces of coal!* I held my tongue and inwardly made some sad reflections upon the solidity and certainty of our æsthetic judgments.

We associate with the color of the eyes many æsthetic, psychical, traditional, and other elements, according to which dark eyes seem to us more adapted to express passion and sensibility ; blue or gray eyes

to express gentleness and goodness. Generally, however, we prefer very accentuated shades ; other things being equal, we find turquoise blue or very brown eyes more beautiful than gray eyes, greenish, or of uncolored color (*colore incoloro*), as one of my old professors of natural history expressed it.

Eyes have a variable brilliancy which contributes much to modify their expression. The eye of one who is laughing, speaking, or energetically thinking, is very bright; the eye of a stupid, weak, or sick man has little brilliancy ; that of the dying is sometimes almost extinct. This brightness deserves attentive examination, for it is one of the most important and most obscure elements in the study of the eye. For the moment we must content ourselves with saying that it depends at once on the structure of the cornea, on its varying convexity under the influence of the ocular muscles, on the humors secreted by the eye, and above all on the veil of tears which bathes its whole exterior surface.

The eyebrows, the eyelids, the lashes, are only secondary elements ; but they serve to modify the physiognomy.

The eyebrows may be thick, very bushy, or scanty, to the point of being scarcely visible. Generally we consider eyebrows which are moderately thick, well-arched, well-lined, and having hairs of uniform length, as beautiful. We prefer them more accentuated in the man, more delicate in the woman, because these two types represent sexual differences which we observe in nature.

When they are too full, especially if they meet, they give to the face an expression of energy which may amount to harshness and ferocity. When, on the contrary, they are almost invisible they take much of the expression from the eye and constitute an element of ugliness. With age the central hairs of the eyebrows become long, and even eventually cover at times a part of the eye, forming thus a sort of bristling bush which gives to the face either a savage or a venerable aspect. Lavater attributed great importance to the eyebrows as a criterion of character :

"Often the eyebrows in themselves express the character, as is witnessed by the portraits of Tasso, Leo Battista Alberti, Boileau, Turenne, Le Févre, Apelius, Oxenstiern, Clarke, Newton, etc.

"Eyebrows gently arched accord with the modesty and simplicity of a young maiden.

"Placed horizontally and in a straight line they correspond with a virile and vigorous character.

"When they are horizontal for a part of their length, and short for the other part, strength of mind is united with frank goodness.

. . . . . .

"I have never seen either a profound thinker or a firm and judicious man with thin eyebrows situated very high and dividing the forehead

into equal parts. Thin eyebrows are an infallible sign of apathy and flabbiness.

. . . . . .

"The nearer they approach the eyes the more serious, profound, and social is the character. This loses in strength, firmness, and boldness in proportion to the height of the eyebrows."

In spite of my profound scepticism towards all physiognomical statements which are based on anatomical characters and not on expression, I confess that I have always found the guesses of Lavater relative to the eyebrows exact in the circle of my own experience. They are so mobile, and they are bound by so close and intimate a dependence with the eyes and with the intelligence, that their morphology, studied in a single race and *cum rationable obsequio*, might very probably furnish the elements of good psychological diagnoses.

Buffon likewise wrote: "After the eyes, the features which contribute most to mark the countenance are the eyebrows. As they are of a different nature from the other parts, they are the more apparent for this contrast, and strike more than any other feature; the eyebrows form a shadow in the picture which brings its colors and forms into relief."

The eyelids may be more or less long, wide, fleshy, open, etc.; but one of their most important characters is furnished by the lashes which beset their mobile borders. The lashes may be short, irregular, or, on the contrary, long, regular and finally bristly. We think long lashes, which throw a shadow on the cheeks, beautiful; these long lashes are one of the most charming attractions of the Andalusian women.

The Nose.—In recent times no one has studied the nose better from a morphological point of view than Topinard.

This feature, nearly immobile, is still very important as an ethnical and as an æsthetic element of the face. One nose is enough to discover the race of its possessor, another to spoil the most beautiful face. Thus the artists were right in calling it *honestamentum faciei*, and Lavater perhaps was not wrong when he said that a beautiful nose is never associated with an ugly face. It is possible, he adds, to be ugly and yet to have beautiful eyes; but a regular nose necessarily exacts a happy harmony of the other features. Many beautiful eyes are seen for one perfectly beautiful nose.

For the illustrious Swiss physiognomist a perfect nose must unite the following characters:

(*a.*) Its length must be equal to that of the forehead.

(*b.*) It should present a slight depression near its root.

(*c.*) Seen in front, its arch should be wide and with its sides almost parallel; but this width should be a little more noticeable near the middle.

(*d.*) The point of the nose must neither be sharp nor fleshy; the lower contour precisely outlined, neither too narrow nor too wide.

(*e.*) The flanks of the nose must be distinctly seen from before, and the nostrils delicately shortened below.

(*f.*) In profile the lower part of the nose should only be one-third of its length.

(*g.*) The nostrils should be more or less pointed in front and rounded behind ; they must be lightly curved, and divided equally by the profile of the upper lip.

(*h.*) The sides of the nose will form a sort of wall.

(*i.*) Above it will almost join the orbital roof, and at the side of the eye it will be at least half an inch wide.

Many of these characters are questionable. Our æsthetic judgments on the nose are nearly always very correct, because they are connected with the most imperious laws of evolution and of organic morphology.

We, belonging to the higher races, regard as ugly all noses which approach that of the ape, snub, flattened, or very small noses, with nostrils failing in parallelism, and the section of which represents the figure eight. In this respect we even sacrifice the laws of geometry to our atavistic prejudices ; we should consider a woman beautiful who had an excessively large nose, rather than pardon a snub one. In Italy we call a large nose aristocratic (especially if it is aquiline), perhaps because the long-nosed conquerors, Greek or Latin, subjugated the autocthonous small-nosed population.

Naturally we look upon all noses which violate the laws of symmetry, or the harmonious proportions of the other features, as ugly. A nose cannot, of course, be beautiful if it is too large or too small, or if it is awry.

The development of the nose in different races is either antero-posterior or transverse, forming thus two extreme types, the aquiline and the flat nose. The long nose belongs generally to all the peoples of Europe, to the white Polynesians, and to the Americans of the North ; the negroes and the Mongols have short noses.

The nose may be long and wide ; it may be so short and flattened that a ruler might be so placed as to rest at once on both cheeks without touching the nose. This is the case with the Esquimaux. The aquiline nose may have one or two protuberances, and the small nose may have the tip turned up, which always gives to the whole face a capricious and impertinent expression. This is the *nez retroussé* so frequently met in France. The Roumanians have a proverb—"*A tip-tilted nose, one person in a house, and no more.*"

Carus distinguishes between five sorts of majestic noses : the *thin*, the *long*, the *hooked*, the *wide*, and the *fleshy*.

Leonardo had formerly indicated more subtle distinctions :

"The junction of the nose with the eyes may be either concave or straight. . . . Noses are of three sorts: straight, concave, or convex. There are four varieties of straight noses: the long, the short, with the tip high, with the tip low. Concave noses are of three sorts, according to whether the concavity is found in the upper, the middle, or the lower part. Convex noses are also of three sorts, for the convexity may be at the top, in the middle, or at the bottom; the prominent parts between which the nose is situated may likewise be straight, concave, or convex. To readily retain the recollection of a face we must first compare in many faces the mouth, eyes, nose, chin, throat, neck, and the shoulders, and make comparisons. Noses are of ten species, according to whether they are straight, arched, hollowed, elevated above, or below rather than in the middle, aquiline, snub, round, or pointed. These distinctions only hold good for noses seen in profile. From the front, there are eleven forms of noses: they may be equal, thick in the middle, thick at the point and thin at the junction, they may have wide or narrow nostrils, high or low, with the apertures laid bare or hidden by the point."

Leonardo, however, was unable to distinguish with precision between all the possible varieties of nose.

In a scientific study it will always be necessary to consult the programme traced by Topinard, who, I believe, has not forgotten a single important morphological element: *

- Maximum height / Maximum width } Transverse index.
- Maximum prominence | Antero-posterior index.
- Ridge
  - Angle of inclination.
  - Direction
    - Rectilinear.
    - Broken or uneven.
    - Convex (aquiline variety).
    - Concave (snub variety).
    - Steep.
  - Form
    - Curved.
    - Flat.
- Base
  - Lobe
    - Distinct (pinched, trilobed).
    - Indistinct.
    - Passing the nostrils.
  - Flanks
    - Approximate.
    - Diverging.
  - Nostrils
    - Form
      - Elliptical.
      - Rounded.
      - Special.
    - Principal axis
      - Small.
      - Large.
    - Plan inclined
      - Sensibly downwards.
      - " forwards.
      - " backwards.
      - " externally.
    - Direction of Principal axis
      - Antero-posterior.
      - Oblique.
      - Transverse.

*Topinard, "De la Morphologie du Nez," *Bulletin de la Société Anthrop.*, 2e. serie, vol. viii., 1873.

With the aid of this analytical table I was able even to classify the nose of Thiébaut, the elder of the two Akkas of Miàni, the tip of whose nose was lower than the two lobes, while the base was very wide.*

One character omitted in the table is the angle which the root of the nose makes with the forehead. It is very marked in the Australians and the Papuans : it is zero in the so-called Greek nose, a conventional rather than an actual form, which is found in all the statues of the ancient Greek sculptors. This angle is much less pronounced in Mongols and Arabs.

The muscles which move the nose are almost atrophied in man. Thus they give only a very feeble movement, and only on rare occasions, notably in asthma, when the muscles are called on, even the feeblest, to aid in respiration. Besides these pathological cases the flanks of the nose dilate and contract very visibly in passion and in pleasure. It seems that these movements are more marked in the inferior races, and among men of the higher races who are much addicted to voluptuousness.

I have remarked that the tip of the nose is nearly always deflected towards the right, and I have proposed to explain the fact by attributing it to the custom of wiping the nose with the right hand. However, my theory has need of confirmation.

The Mouth.—If the eye is the most expressive part of the face, the mouth is the most sympathetic. The yearnings of love and the passions of voluptuousness converge here, as to their natural centre. In fact, as we shall see better in the second part, the eye is the centre of the expression of thought ; the mouth is the expressive centre of feeling and of sensuality.

Tommaseo was then completely right when he wrote in his *Moral Thoughts :* "It was not without reason that the Latins called the whole face of man *os*. The soul dwells in the mouth."

And Lavater devoted to the mouth a page replete with delicate and sensuous exaltation :

"The mouth is the interpreter and organ of the mind and of the heart. In repose, as in the infinite variety of its movements, it unites a world of characters. It is eloquent even in its silence.

"This part of our body is so sacred to me that I scarcely dare to speak of it. What a subject of admiration !

"What a sublime marvel in the midst of so many other marvels of which my being consists ! Nor only does my mouth breathe the vital air, and fulfil the functions which are common to me with the animals, but it serves to form speech ; it speaks, and will still speak, when it can never open again.

"Readers, expect nothing of me on the subject of the most active

*Mantegazza e Zanetti, *I due Akka del Miani.* Archivio per l'antrop., etc., tomo iv. p. 137.

and the most expressive of all my organs ; this undertaking is above my strength.

. . . . . .

"Humanity ! how thou art degraded ! What will be my ecstasy in the eternal life when my eyes shall behold in the face of Jesus Christ the mouth of divinity—when I shall utter this cry of joy, 'I too have received a mouth like that which I adore, and I dare to pronounce the name of Him who has given it to me ! Life eternal, to think of thee is already happiness ! '

"I conjure our painters and every artist whose mission it is to represent man—I conjure them with all my might to study the most precious of our organs in all its varieties, in all its proportions, and in all its harmonies."

Here is a sensuous mysticism which recalls to me the hysterical and religious ecstasies of Saint Theresa. Lavater had a very feminine nature, and was profoundly religious.

The mouth has not only fascinated Tommaseo and Lavater, both of them visionaries in sentiment, although very different from each other; it equally fascinated Herder, the creator of the philosophy of history. Hear him :

"It is from the mouth that the voice issues, interpreter of the heart and of the soul, expression of feeling, of friendship, and of the purest enthusiasm. The upper lip translates the inclinations, the appetites, the disquietude of love ; pride and passion contract it, cunning attenuates it ; goodness of heart reflects it, debauchery enervates and debases it, love and the passions incarnate themselves there with an inexpressible charm."

Reader, without being a great man like those whom I have just cited, compare the two different emotions which two beautiful eyes or a beautiful mouth in a female face awaken in you. In the first case you may be struck with open-mouthed admiration, but in the second you cannot save yourself from loving ardently. The woman whose eyes have awakened our love inspires us with enthusiasm, exalts us, throws us into intellectual ecstasy ; but she whose mouth fascinates us twines us round, binds us, belongs to us already, at least in the irresponsible world of desires. The eye is the azure heaven to which none may attain ; the mouth is the earth with its perfumes, its ardors, and the profound sensuality of its fruits.

But let us leave poetry, and re-enter the severe laboratory of anatomy.

Generally all the higher races have a moderately-sized mouth, with the lips rather thin and slightly curved. Even when we oppose Darwinism from the prejudice of the school, or from religious horror, we agree in considering ugly a mouth which recalls our cousins, the anthropoid apes. A mouth is ugly if it is too large or too far from

the nose, when the upper lip is a sort of long curtain. Unless we are sensual as some monkeys, we think a mouth with too fleshy lips very ugly, these nearly always going with a prominent snout, or, to speak scientifically, with a *prognathous face.* The extreme thickness of the lips which is noted in nearly all negroes is due to the hypertrophy of the adipose cellular tissue, and to the great development of orbicular muscle; and it is true that this type nearly always coincides with great sensuality.

Lavater wishes (and I believe rightly) that we should distinguish in a mouth:

(*a*) The lips properly speaking, taken singly;

(*b*) Their line of junction when the mouth is closed;

(*c*) The centre of the upper lip;

(*d*) The centre of the lower lip;

(*e*) The base of the line of the middle (Lavater uses the term base for the angle perceived when a mouth is seen in profile in a dimly-lighted place, and which throws a little shadow on the lower lip);

(*f*) The angles in which this line ends.

As to the general form, Lavater distinguishes three principal varieties:

Mouths in which the upper lip projects over the lower. This is a distinctive sign of goodness of heart (?). Such may also be called *sentimental mouths.*

Mouths in which the two lips advance equally. They are met with in honest and sincere people (?), and may be called *loyal mouths.*

Mouths in which the lower lip projects below the upper, and which may be called *irritable mouths.*

To-day, more ignorant or more sceptical than Lavater, we content ourselves with saying that the excessive prominence of the upper lip is often accompanied with scrupulousness, and that on the contrary a marked prominence of the lower lip generally denotes great firmness of character or obstinacy.

The Chin.—It has been repeated in many books that man alone has a chin, but perhaps it is only true of the skeleton. Still it is beyond doubt that the higher races have a great repugnance to receding and slightly accentuated chins. In reality this is a character of inferiority which is found in very low types of humanity. On the contrary, we think beautiful a rounded or oval chin, tolerably marked in the man, less striking in the woman. Sharply-pointed chins, on the contrary, give the idea of a certain hardness which cannot be associated with grace and kindliness. But these opinions, like all others of the same sort, have no serious basis. It does, however, appear to be evident that, other things equal, a very prominent chin has the same significance as the prominence of the lower lip, which we have noted above. It is an ethnical character of the English who are a strong-willed

people. "A long experience has shown me," Lavater assures us, "that a prominent chin always denotes something positive, while the receding chin has always a negative signification." Often the energy or feebleness of an individual is only manifested in his chin. But Lavater is not disposed to admit with the ancients that a sharp chin indicates astuteness.

Many proverbs in different languages assign a certain character of kindliness to chins which have a dimple in the centre. Lavater declares that his experience has confirmed popular opinion, but I will not take the responsibility of maintaining or contradicting it. It is certain that a dimple thus placed beautifies still more a beautiful face. Therefore Pulci was right when in his *Morgante Maggiore* he thus sums up in a happy line all the good points of a beautiful chin—

"A rounded chin, dimpled and well proportioned."

With two or three adjectives we may always define some form of chin, for it is one of the features least abounding in details. Lavater, for his part, only distinguished between three principal varieties—to wit, receding chins (which I think peculiar to women), those the profile of which is on the same plane as that of the lower lip, and finally the sharp chins which project beyond the lower lip.

Tommaseo has devoted to the chin one of his metaphysical reveries:

"A small chin indicates affection; a long and full chin, coldness; long and retreating, perspicacity and firmness; a dimple in the chin, more grace in the body than in the soul."

The Cheeks.—But slightly prominent in the whites and the negroes, the cheeks are very pronounced in the Mongol race, with whom they constitute one of the most characteristic features. We have already spoken of their prominence in the Esquimaux; but the Buriates do not differ at all in this respect, for recently my excellent friend Sommier wrote to me from Siberia that he had travelled with a Buriate ambassador, and that, looking at him in profile, he noticed that his cheek appeared above his nose.

To us, people of the Aryan race, too prominent cheeks are always ugly.

The Ears.—This is perhaps the least expressive feature of the face, on one side because it is still less mobile than the nose, and only very rarely mobile at all; on the other side because it is placed in a half-concealed position, where it must be sought before it can be admired or condemned. We must admit, moreover, that the ear, where it is perfect, completes the beauty of the face.

In the æsthetic judgments which we form on the ear, we are again Darwinians without known it. We think it ugly if too large, and especially when projecting from the head, when there is no lobe, or if the pinna is ape-like in its upper part. We think it beautiful when it

is small, well-turned, with well-drawn sinuosities, when it lies closely along the skull, and when it has a rounded and distinct lobe.

Circular, irregular, and square ears are ugly ; oval ears are beautiful.

It appears that the lobe of the ear is wanting among several races of Northern Africa (Chaouia, Kabyles).

The Teeth.—When the mouth is closed the teeth are not seen ; but when it opens, the teeth are of foremost importance to the face, to which they add a capital element of admiration or horror, of sympathy or repugnance. The most beautiful teeth are not enough to make a man beautiful ; but ugly teeth would spoil the beauty of the Venus of Milo herself.

In our higher races we consider as beautiful teeth which are not too prominent, without gaps between them, not too thick, not too wide, not too long, white or slightly tinted with blue. We think teeth ugly which are prominent, placed awry, irregular, yellow, or far apart.

It is repugnant to all to see a large part of the gum of the upper jaw when the mouth opens. It is a flaw in beauty to have bad teeth ; it is like a spot on the sun. Since the hygiene of the teeth is at the same time the hygiene of beauty, good dentists merit a golden statue, or, at least, a place of honor among the principal benefactors of humanity.

An ethnological study on the teeth has yet to be made ; it will reveal distinctive characters of great importance.

CHAPTER IV.

THE FEATURES OF THE FACE (*Continued*).

THE HAIR AND THE BEARD—MOLES—WRINKLES.

THE hair and the beard are secondary elements of the face ; but in many cases they suffice to modify its æsthetic value or to determine the race ; they are alone always characteristic of the sex and indirectly of each of the ages of life.

The Hair.—All men on the earth have heads covered with hair. An ethnologist has spoken of a bald tribe on the west coast of Australia, which seem to come from a mixture of Australians and Chinese; but this assertion has need of confirmation.* Human hair differs in color, length, thickness, and by the structure which causes it to take a particular character, and gives it very diverse aspects, even when looked at with the naked eye and without recourse to the microscope.

* Just as I am correcting my proofs my excellent friend, Professor Giglioli, has made me a present of a photograph which represents a completely glabrous aborigine of Central Queensland.

The palette which nature has used to color our hair is very rich. The Anthropological Society of Paris has adopted the table of tints which serves them to determine the coloration of the skin; but this scale has the same fault as that employed for the color of the eye.

From the white of linen we pass to light blonde; to golden blonde, to red, to chestnut, to brown, and to jet black.

If all the peoples of the earth are massed together the most widely spread color of the hair is black; it is enough to name the Mongols, the Malays, the Negroes, the American Indians, and the Europeans of the South.

Blonde hair is common in the Germanic, Celtic, and Slav branches of the Aryan race, and in the Finnish branch of the Mongol race. Red is an exceptional color which is not peculiar to any race, but which may, however, be considered as a variety of blonde; in fact it is never met with among black-haired races.

Sommier and I, while studying the Lapps, have found chestnut hair to be most common among them. Dark black is very rare, blonde common enough. For the rest, here is a more precise table:

COLORS OF HAIR.

	Black.	Chestnut.			Fair.		
		Deep.	Medium.	Light.	Deep.	Medium.	Light.
Women..2	9	11	6	9	17	8
Men.....1	8	9	1	3	4	6

One color of the hair is nearly always associated, as we have already seen, with a certain hue of the eyes, and the union of the two characters constitutes one of the most immutable among the ethnical characters which enable us to judge of the purity of a race. For example, when among a people the eyes and hair are constantly black or constantly light, we say that the race is pure. A contrary conclusion is drawn when different hues are found which mingle in different ways. Nevertheless, this ethnological dogma can only be accepted with reservations, since for many peoples we want statistics worthy of faith, and also, because races very remote from each other may have the same eyes and hair.

For instance, will you classify the Japanese and the Sardinians together simply because they both have black eyes and black hair? The diverse distribution of the pigment is a good anatomical character on which to institute a system for the classification of men, but not to establish a taxonomical method.*

Topinard, profiting by the innumerable observations collected by

*Pfaff says that black hair predominates in the extreme zones, and that thus the Greenlanders and the Esquimaux have hair of the same color as the negroes. But he has forgotten the Lapps.

Dr. Beddoe, has drawn up a table of human chromatology founded on the color of the hair and eyes:

	Red and Blonde.	Intermediate or Chestnut.	Brown.
23 Danes	78.5 p. ct.	17.9 p. ct.	3.5 p. ct.
400 Walloons	52.0	22.2	25.2
1125 Scotch Highlanders	45.4	23.9	30.9
90 Irish	45.3	21.2	31.9
654 Normans	33.1	29.2	37.6
1250 Viennese	32.8	25.8	41.4
368 Bretons	20.0	22.7	57.3
518 Ligurians	17.0	16.0	67.0
163 Northern Jews	14.4	13.3	73.6
233 Southern ,,	13.5	13.7	73.1
130 Maltese	8.8	11.8	79.3

From this table the following conclusions can be drawn.

1. None of the series examined presents one color only.

2. The largest proportion of blondes is found among the Danes, then among the Walloons; the largest proportion of brown-haired, among the Maltese, the Jews, and the Ligurians.

3. The proportion of brown-haired is the same among the Jews of the North, as those of the South.

4. The Bretons are generally brown-haired.

We believe that man, especially among the higher races (Aryan or Semitic), may, outside all ethnical influence, present hair of different colors. Of this we may be convinced without going beyond Italy; for in this country we meet blonde, chestnut, and brown-haired Jews without having any right to explain the fact by mysterious reasons.

It is certain that in Europe, and especially in the large towns, blondes tend to diminish in number. This has been demonstrated in England to the great chagrin of the English. Charnock affirms that this change has asserted itself in Europe for two thousand years. Some seek to explain it by the diet followed in towns, where meat plays a larger part than in the country. Others, on the contrary, explain it by saying that the hygienic conditions, being less good in the large centres of population, tend to make the blonde type—less resistant than the brown—disappear. In my opinion the problem is very complex, and the observations collected do not yet offer sufficient elements to enable us to arrive at a serious conclusion.

Those who desire to study the problem will find in these data a point of departure for more profound and extensive investigations.

Dr. G. Mayr has represented in two cartographical tables* the

	Provinces.		Average.	Towns.	Country.
	Northern.	Southern.			
Light Hair	68.67 p. ct.	38.10 p. ct.	54 p. ct.	49 p. ct.	55 p. ct.
Light Eyes	73.75	59.60	66	63	67
White Skin	92.94	70.73	85		

**Die Bayerische Jugend nach der Farbe der Augen der Haare und der Haut*, 1876.

relative frequency of blonde hair, of white skin, and light eyes among the people of Bavria. It results therefrom, for this region considered apart, that these types are more numerous in the northern than in the southern provinces.

A smaller proportion of light-haired and light-eyed people are found in the towns than in the country.

Mayr attributes the larger proportion of light hues found in the rural districts to the movement of emigration, which brings a greater mixture of races, into the towns. In this mixture the dark races, though less numerous, give proof of a greater reproductive power. It seems to me that other influences also enter into play to determine these differences. Thus, according to Professor Bertillon,* it has been ascertained in England that blonde hair is decreasing and tending to dark hair. Now we know that the urban population in England is continually increasing, aud that actually 50 per cent. of the population dwell in towns containing 2000 souls, and 38 per cent. in towns of more than 20,000.

Of 100 individuals with fair hair, 38 have blue eyes, 39 gray eyes, and 23 dark eyes. Of 100 individuals with brown hair, 22 have blue eyes, 34 gray eyes, and 44 dark eyes.

Passing from Bavaria to a more northern state, to Saxony, we find on an average per thousand individuals the following figures :†

Eyes.			Hair.				Skin.	
Blue.	Gray.	Brown.	Fair.	Red.	Brown.	Black.	Fair.	Dark.
378	331	288	692	2	296	9	940	60

The dark population then diminishes noticeably, but here, too, it is ascertained that it is maintained more numerously in the large centres.

Of 100 individuals with fair hair, 44 have blue eyes, 35 grey eyes and 21 dark eyes ; of 100 dark-haired individuals, 46 have dark eyes, 29 gray eyes, and 25 blue eyes. These proportions differ very little from those observed in Bavaria.

The observations of F. Korösi at Buda-Pesth on 10,000 Hungarian students show the following distribution :

Skin.		Eyes.				Hair.		
Dark.	Fair.	Black.	Brown.	Gray.	Blue.	Black.	Brown.	Fair or Red.
2,210	7,790	15	4,490	2,594	2,901	406	4,501	5,092
		4,505				4,907		

In France such exact investigations have not been made into this matter. Dr. Bernard ‡ divided the departments of France into two groups, according to the prevalence of the Cimbric race (Nord, Jura,

* International Congress of Demography held at Paris, 1878 : session of July 7.

† D. Geissler, *Die Farbe der Augen, der haare und der Haut bei den Schulkindern Sachsens.*

‡ Topinard, *Manuel d' Anthropologie.*

Bas-Rhin, Moselle, Haute-Rhin, Meurthe), or the Celts (Corrèze, Haute-Loire, Aveyron, Indre, Cantal, Ardèche, Dordogne), and found that of a hundred individuals the colors of eyes and hair fall into the following divisions :

	Hair.		Eyes.	
	Fair.	Chestnut.	Light.	Brown.
Cimbric Departments	55	45	56	42
Celtic "	22	78	50	50

Among the light of the Celtic departments is comprised a large proportion of gray eyes, which according to Topinard, are one of the attributes of the Celtic race.

The dark type which prevails in Italy is connected, on the one side, by the frequency of gray eyes in Piedmont, to the ethnical characters of the Celtic race ; on the other side, by the abundance of blue eyes in Venetia and in Lombardy, with the Germanic and Slav races. In the southern provinces an important contingent of people of the light type has sensibly modified the ethnography.

During the War of Secession, the American army, in which Europeans of every race were enrolled, furnished Dr. Beddoe with the following data on the color of hair :

	Red or Fair.	Chestnut.	Black.
English	49 p. ct.	27	24
Scotch	50.2	25.7	23
Irish	50.5	20.4	23.3
Germans	48	22.6	23.8
Scandinavians	68.4	19.5	11.8
Spanish and Portuguese	23.7	17.7	57.8

The Jewish race has especially attracted the attention of ethnographers. It presents fair hair and dark hair, light eyes and dark eyes. In Germany the Israelite population is much darker than the rest of the nation, since it counts 42 per cent. dark ; but it comprises a remarkably fair fraction—that is to say, with blonde hair, blue eyes, and fair complexion ; this fraction amounts to 11.2 per cent. of the whole. In Hungary, two-thirds of the Jews have a fair skin, 57 per cent. dark eyes, and 76 per cent. dark hair.*

The color of the hair, irrespective of its abundance, length or form, seems beautiful or ugly according to our individual taste, which suffers in turn the many influences of habit, education, race, prejudices, and divers associations of ideas and sentiment.

Still in these subtle æsthetic appreciations some fundamental ideas survive which are common to all Europeans, or, to speak more truly, to all individuals of higher race. We like hair which has rare or extreme tints, or which, combining diverse colorations, gives us at once

* Raseri, *Materiali per l'etnologia italiana*. Rome, 1879, p. 120. So far as Italy is concerned we refer to the appendix at the end of the volume; data are given there as to the color of the eyes and of the hair in Italy.

several sensations. This is why we like flaxen, tawny blonde, (rare colors,) jet black, and pronounced chestnut. On the contrary, indefinite chestnut and uncertain brown are displeasing. Red hair, although rare, is disliked by nearly all because it is an almost monstrous type which is always associated with two unpleasant things—a disagreeably smelling perspiration and numerous freckles on the skin.

Hair may be so long as to exceed the length of the body, or so short as to be but a few centimetres. The Aryans and Semites have very long hair; woolly hair is always very short. The Andalusians, the Spanish Americans, and the women of Paraguay are celebrated for the length of their hair. I knew a very beautiful lady at Salta whose hair was a decimetre longer than her body, though she was of middle height, and at Paraguay I have seen young girls who might have enveloped themselves in their hair, and, without any other garment, have been completely clad.

The length of the hair is independent of the thickness, or, as it is commonly said, of its quantity. Besides, the quantity is not easily appreciated at the first glance; for coarse hairs take up much more room than fine hairs, which may cause a mistake. Generally fair hair is much thicker than brown; chestnut between the two.

After fifty hair falls more frequently, and physiological baldness begins. Sometimes, however, the hair is preserved into extreme old age. The negroes, the Papuans, the Americans, become bald more rarely and later than the Europeans, who may be bald at thirty. Women, who have longer hair than men, also retain it longer, and scarcely ever become completely bald.

A section of hair examined with the microscope does not always present the same form. Pruner-Bey and Roujon believed some years ago that it was possible to recognize all the human races by the various forms presented by transverse sections of the hair. But a more attentive examination has convinced all anthropologists that these two doctors were mistaken, and had taken as constant and natural facts what really resulted from the cutting of the section of the hair.*

To-day we know that curly hair has an elliptical section, smooth hair a round section. There are plenty of intermediate degrees between these two. We prefer, according to our tastes, some smooth hair, some curling hair ; we always detest woolly hair, because we inevitably associate with it the idea of some characters of the inferior races.

It was Bory de Saint-Vincent who divided all men into the *leiotrichous* races—that is, the smooth-haired—and into *ulotrichous* races—that is to say, woolly-haired. More recently anthropologists have subdivided woolly hair into *ericomes* (continuously inserted as in the negroes), and into *lophocomes* (disconnectedly inserted as in the Hot-

**Bull. de la Société d'anthropologie.* Paris, 1873, p. 3.

tentots, Negritoes, and the Boschimans); but Topinard has shown this distinction to be false. If the woolly tufts of the lophocome are divided with a comb, and if they are shaved, it is clearly seen that the roots of the hairs are evenly distributed over the whole surface of the skull, without forming the islets or bushes which are spoken of in books of ethnology and anthropology.*

The woolly hair of the negro is very fine; the roots are much smaller and less deep than in any other race.

Pfaff has measured the average thickness of human hairs †:

Down of infant at the breast	0.008—0.01
" of the arm of a child	0.015
" of the upper lip of a woman	0.018
Hair on the arm of a man	0.03—0.04
Eyelash of a man	0.01
Hair on the tragus	0.045
Hair of men	0.08
Hair of women	0.06
Hair on the hand of a man	0.07
Hair on the nose of a man	0.08
Hair on the pubis (of man)	0.12
" " (of woman)	0.15
Eyebrows of man	0.12
Mustaches	0.13—0.14
Beard	0.15
Hair of the arm-pits	0.15
Pig's bristles	0.27

Eleven years ago I wrote some glowing lines on the æsthetics and poetry of the hair, which I ask permission to reproduce here. Perhaps a theft which the master of a house makes on himself may be excused:

"The eye is the window of the soul; in a lip may be concentrated enough beauty to kill a man or to save him; on the brow enough intelligence may shine to announce that man is a God begun; the chin may alone reveal infinite kindliness and gentleness; the body, by its undulations, may speak of strength and of love; but the hair, which does not speak, which does not lie, and to which sensitiveness has been denied, may multiply a hundredfold every other beauty, and hide in its infinite labyrinths as much poetry as man is capable of experiencing and creating.

"It bends to a thousand caprices of fancy, it obeys the boldest desires of the sense of touch, it gives an infinite variety to the æsthetic combinations of the features, and on the rigid lines of the skeleton continually brings about new beauties, so that it makes a hundred diverse pictures of one face, and of a single beauty a thousand beauties. It is living matter which yields with infinite docility to will, to taste,

* *Bullet. de la Société d'anthropologie*, 1878, p. 61.

† Pfaff, *Das menschliche Haar, etc., Zweite vermehrte Auflage.* Leipsic, 1869.

to art, and seems a palpitating wave of warmth, of passion, almost of thought, which flows gently and continuously as water from a perennial source.

"The head of man is the temple of his thought and of his passions ; it is there that his greatness and his virile beauty resides ; but there where the man ends and where heaven begins, the wind agitates a forest which is no longer flesh, and is not yet brute matter ; it is a frontier where our eyes never cease to seek sensations, and where a dawn of ever-changing and always beautiful forms moves and seems to live.

"In man is wanting that infinite subdivision and multiplicity of the vegetable world, and nature has compensated him in his hair. To the sense of touch a thousand voluptuous contacts are needful, and these nature has given with the hair."*

Different nations attribute different importance to the hair, which is not always in accord with their racial rank. The Quakers, who are very high in the scale of human development, reduce the dressing of the hair to a minimum ; many American races and the Lapps exhibit the same indifference. On the contrary, the Papuans devote great attention to their hair, and they braid and arrange it in numerous different modes which truly merit the name of capillary edifices. It is remarkable among these people that the men give more care to their coiffure than the ladies, and voluntarily submit to the inconvenience of resting their heads while sleeping on uncomfortable wooden supports so that they may not disarrange the singular edifices which they have erected on their skulls. Even in Europe, among different nations and at different times, the hair has been subjected to the strangest arrangements, and to the most bizarre caprices. Twisted and retwisted, plaited or worn loose, it has augmented in different ways the proportions of the head, simulating now a tower, now a nest, now pastilles, the æsthetic and ethnical history of the hair would deserve a volume of no small proportions.

The Beard.—The beard is peculiar to man ; everywhere nature has denied it to woman. However, in many races, it is so deficient in men that they can scarcely be said to have any. Further, it does not correspond to any intellectual rank, for it is very developed at once among the Australians, and among the most beautiful and advanced types of the Aryans and the Semites.

The most beardless people are generally those connected with the Mongolian and American races. Among the Lapps I found very little beard, and only on the upper lip and the chin.

Many races endowed with beards are in the habit of plucking them out. This is the practice of the Tehuelches of the Argentine Pampas who use a piece of silver for the purpose. The same prevails among

* See Mantegazza, *Igiene della bellezza*.

the Kalmucks and the Maoris, who have a proverb—"*There is no woman for a hairy man.*"

The Russians, Persians, and Scandinavians have very beautiful beards. Among some oriental races the clear outlines of the beard are very remarkable; while among the Australians and the Todas it is irregularly distributed over the face in little tufts.

A beard is pleasing both to women and to men, because it is a sexual character, and gives a virile aspect to the face. For the same reason it is a repulsive monstrosity in women; hence our proverb, "*A bearded woman greet with stones.*"

Physiognomists, astrologers, and poets have discoursed and oftener joked upon the significance of the beard. Remember the stanza which Guadagnoli has dedicated to the mustache:

"Black, it bespeaks a manly boldness;
Brown, hot head and good temper;
Red, wiliness; blonde, a noble soul;
White, a want of vital heat;
Bristly, fury; thick, rusticity;
Coarse, audacity; scanty, languor."

Generally the beard is lighter in color than the hair, both in man and in the anthropoid apes.

Moles.—Moles may be found all over the body, and even on the face, where, according to their position, their size, their form and their color, they are an ornament or a deformity. A little brown or very black mole, placed capriciously on the chin of a lady, or near her lip, or on her cheek, throws the whiteness of her skin into relief, and by arresting our attention adds another grace to the most perfect beauty. There are some little moles fortunate enough to have received more kisses than the middle of the mouth; they have in human beauty the same value as dimples, which, sometimes in one cheek, sometimes in both, seduce and fill with love the fortunate mortal who contemplates them.

It is known that at different periods women have put artificial moles on their faces, and that the old physiognomists amused themselves with seeking a correspondence between the moles placed in different parts of our bodies.

Dalla Porta, in the fifth book of his work, gives us a face in which these correspondences are noted. *In this plate*, he says, *is seen a face half that of a man, half that of a woman, to show where the moles of either are to be found; the lines indicate the places of the face and of the body.* These cabalistic laws, which, according to Dalla Porta, govern the distribution of moles on our bodies, are nearly all taken from the Arab, Hali Abenragel. Here is a sample of these strange ramblings:

"Melampo said that a woman, if she has a mole on the eye or on the nose, will be more attracted than is fit to Venus; if a woman has

a mole on the side of her nose her voluptuousness will be insatiable. Hali adds that if one has a mole on the ear there will be another on the thigh. . . . "

The gallant Casanova must have read the old writers on physiognomy, when in Holland he claimed by the mole found on the face of a beautiful woman to divine the existence of another in more hidden parts.

Wrinkles.—Wrinkles are folds or furrows, more or less deep, which form in the skin as an effect of time, or by the repeated action of certain muscular contractions, or, lastly, in consequence of defective nutrition.

Wrinkles have been little studied, and well deserve a scientific monograph. I have consulted my illustrious friend, Professor Bizzozero, on their histological nature, and he has kindly replied, furnishing me with the few data which science possesses on this subject.

"They develop," says Henle,* "as wrinkles in the face during the course of a long life, in consequence of the diminution of elasticity and turgescence, of the extension and growing dilatation of the skin. . . . They do not only extend to the epidermis, for they are still to be seen on the dermis stripped of its epidermis."

According to O. Simon, the slight furrows which are scattered and anastomose over the whole surface of the body correspond in direction to the bundles of connective tissue ; their axes are parallel to those of the predominant connective bundles. C. Langer has demonstrated that by the anastomosing of the connective bundles rhomboidal meshes are formed, the long axes of which, in different regions, are parallel to the direction of the natural tension of the skin. They are, however, never parallel to the principal axis of the body, but on the trunk and at the extremities they lie obliquely, anteriorly, and below.

I have found nothing of interest in the treatises of Kölliker, Stricker, Krause, Pouchet, and Tourneux.

It seems, then, that wrinkles run through the entire dermis, and that their direction is determined by the predominant direction of the connective bundles which constitute the reticular portion of the skin.

The study of expression rather than histology should involve the investigation of wrinkles, since they afford inexorable marks of certain periods of human life, as Racine has said :

> "Quand, par d'affreux sillons l'implacable vieillesse
> A sur un front hideux imprimé la tristesse."

They may also tell a page of our history :

> "Les rides sur son front ont gravé ses exploits."
>
> CORNEILLE.

Wrinkles may occur in any part of the body, on the hands, on the neck, on the stomach ; but they are more generally found on the face,

*Henle, *System Anat.*, vol. ii. p. 9.

and in the most mobile parts—for example, round the eye, on the chin, and in the interval from the lips to the nose and cheeks.

According to their direction, wrinkles may be divided into horizontal, perpendicular to the axis of the body, oblique, arched, and confused or intersecting.

The most frequent and characteristic wrinkles are the following:

The *transverse wrinkles of the forehead*, which are found even in children who are consumptive, rickety, or idiots. They are normal in the healthy man who is over forty.

The *vertical wrinkles of the forehead*, which appear very early in men who do much brain work, but which are appropriate to all at a certain age.

Arched and intersecting wrinkles, which are situated in the middle of the lower region of the forehead, and which indicate long and intense physical or moral suffering when they appear too early.

The *crow's feet*, which show themselves inevitably at forty, and sometimes earlier. They are formed by wrinkles which radiate from the outer corner of the eye.

The *wrinkles of the nose, transverse or vertical*, which appear either with maturity or in old age.

The *naso-labial wrinkle*, which descends from the upper part of the wing of the nose to the corner of the mouth. It is perhaps the first wrinkle which time imprints, and its precocity may be hereditary. I have had it since I was twenty-two years of age.

The *geno-mental wrinkle*, passing with a slight curve from the cheeks to the chin.

The *little wrinkles with close meshes*, which cover the face, and are a sign of age and decrepitude.

The *palpebral wrinkles*, which I should like to call *genital;* they are very delicate, and appear on the upper eyelid, sometimes on the lower. They give a look of lassitude to the eye; they are frequently seen in libertines, and in women at their periods, especially when menstruation is irregular and painful.

Wrinkles appear sooner in a man than in a woman; they are more precocious and deeper in nervous men whose faces are very mobile, and among those who, in consequence of successive maladies, have passed alternately from plumpness to thinness.

For certain wrinkles there is no possible remedy, either of prevention or of cure. It would be as good to try and stay the wings of time. The Spanish proverb rightly says: "*El dente miente, la cana engaña, pero la arruga desengaña*" ("the teeth lie, the hair deceives, but wrinkles undeceive").

To move the face as little as possible, to anoint it with greasy substances, to protect it from excessively hot rays of the sun, are good precautions against wrinkles; but for those whose happiness

does not depend on their vanity, I fear the remedy would be worse than the evil.

A natural and sovereign remedy lies in growing stout at the period when wrinkles are wont to appear; the skin stretches, and the folds which are beginning to form delay their fatal appearance. On the contrary, nothing is more fatal than, after having been fat up to forty, to grow thin at the wrinkling age.*

CHAPTER V.

COMPARATIVE MORPHOLOGY OF THE HUMAN FACE.

ÆSTHETICS OF THE FACE.

READING the title of this chapter one may think it presumptuous and ridiculous to desire to embrace in a few pages a subject which would suffice for the meditation of an entire life. I hasten to reply that I give here the germ of two other books which will see light later on if time and my strength permit.

In my *Microcosm* I shall give an "Essay on Man," where all ethnological questions which relate to ethnical variations in the human face will be treated. In my *Epicure* I shall try to give a "Treatise on Beautiful Things," where, naturally, man will hold the first place.

In this chapter I shall say enough to make the work on the *Expression of Emotion* complete in its members; even those being included which, although yet without nerve or muscle, are already drawn in their essential outline. He who knows how to read between the lines will find sketched there my ethnological and æsthetic convictions, and will derive thence matter for long meditation, which perhaps will not be sterile.

Human faces are so variable in their relative proportions, in their lines, in their agreements and disagreements, that we may say there are as many faces in the world as men, and that none has been twice repeated in the course of centuries. Some, however, resemble each other so much as to be taken one for the other (as happens sometimes with twins of the same sex); others, on the contrary, are so unlike that they seem to belong to animals of a different species. To bring together similar faces, to separate the unlike, is to classify and *ethnologize*, which may seem easy but is in reality one of the most severe tasks which can be imposed on a naturalist. The differences proceed by infinitely small degrees; the extreme poles are united by so many intermediate rings that there is enough to confuse and weary the most penetrating observer and the most skilful classifier. If it were possible for us to have

*This page on wrinkles contains the germ of a monograph, which, if time permit, will appear later.

at once before our eyes every human being we might unite the Venus of Milo to the Tungoos woman, the Apollo of Belvedere to the Australian, by an infinite series of intermediates, and pass from one to the other without a lacuna and without an obstacle. Some years ago I addressed to my friend, Professor Giglioli, an ethnological letter (*Man and Men : Introduction to a Journey Round the World in the Italian corvette, "Magenta."* Maisner, 1876) in which I made my confession of faith in the human race. To-day, after the lapse of years, after the internal and external work of criticism, which eats into the steel of the most robust convictions, I experience a lively satisfaction in affirming that I still think the same. I have been able to modify the arrangement of some branch or some twig of the ethnological tree, but my syllabus has still for me all the authority of a dogma. Here is my syllabus, in which to replace the words *man* and *race* by *face* is to give my confession of faith in the comparative morphology of human faces:

1. Man is one of the most cosmopolitan and variable of animals ; also he presents a very great variety of races and sub-races.

2. The number of races is indefinite ; many have disappeared ; others are forming and will form.

3. The further we go back into history the more races and sub-races we find, because formerly men travelled less, and remained longer isolated from one another.

4. At the foot and at the summit of the tree of humanity the branches and branchlets approximate, so that the highest and the lowest touch. The negro who rises to the Caffir approaches the European, and the European, degenerated by goitre, cretinism, or hunger, approaches the negro and Australian.

5. Generally the lowest races are black or brown ; the highest are white or almost white.

6. In the classification of races we ought as far as possible to exclude the question of origin, because investigation into origins is the most fertile source of ethnological errors.

Since the day on which I published my ethnological tree, in which I had classed every race by the criterion of intelligence, this tree (Plate 4) has given birth to two others, which I now present to the world for the first time (Plates 2 and 3). In the third plate we see races approximating in their external morphological characters, without any preconceived idea of monogenism or polygenism, without any deference to any philological or ethnological authority whatever. In the fourth we have men distributed according to their rank in beauty such as we, Aryans, conceive it.

Here we have three classifications—to wit, a *system*, a *method* and an intermediate *modus agendi*—which has at once something of method and of system. In fact, in Plate 4 races are distributed by the sole criterion of intelligence ; in Plate 2 by that of the skull, the color of

the skin, the nature of the hair, etc.; in Plate 3 we have the morphological element reinforced by subjective labors.

The two systems of classification which resemble each other most in the distribution of the branches are the first and the second—an evident proof that the ethnological essay which I proposed to the anthropologists was not as systematic as it might appear at first sight. In fact, as the brain is a very complex organ, and so to say the supreme synthesis of all the vital energies, a hundred secondary characters are therein concentrated, by which it is modified, and with which it rises or degenerates.

I think that we may reduce the principal ethnical types of the human race to the following:

1. Aryan type } which are frequently mixed and confounded with one another.
2. Semitic type }
3. Negro type.
4. Negrito type.
5. Hottentot type.
6. Mongolian type.
7. Malay type } tending towards the Aryan.
8. American type } " " Mongolian.
9. Australian type.

In Plate 8 we have three idols, the one an old Peruvian, the second a Maori, the third a Papuan, in which may be seen how the people of low development always give to their gods the ethnical type which is that of their race. As with the gods so with the national masks. Studying the *stenterello*, the *gianduia*, the *meneghino*, the *pantaloon*, the *harlequin*, and other Italian masks, we recognize that in these caricatures a people always personifies itself while exaggerating the characters of its own physiognomy.

Volumes will be written on beauty in general and on human beauty in particular, so long as men inhabit this planet, and schools of æsthetics will be founded which will change their lines more than once. I shall also write my volume, which may remain *vox clamans in deserto*, if my opinion represent but the vote and thought of one, or which, under more favorable circumstances, may be considered as the utterance of an epoch and of a nation.

Meanwhile, permit me to trace in the manner of the magician a triangle, which in my opinion includes all the æsthetic casuistry. For me, this great problem is circumscribed by the three lofty definitions which emanate from three geniuses, not only diverse, but opposed:

"Beauty is the splendor of truth."—PLATO.

"Beauty to the toad is his mate."—VOLTAIRE.

"Physical beauty: is it not subject to the caprices of the senses, of climate, and of opinion?"—MIRABEAU.

In the beautiful we seek the type of perfection, the type of everything, the prototype of every type. The butterfly is beautiful when it

combines ideal lightness with the dazzling and many-hued splendor of the forms proper to this insect; the tawny lion is beautiful in his strength, with his great mane. Man is more beautiful than any living creature, because, placed at the summit of animal existence, he combines all the most elegant forms with the most powerful manifestations of life; he is beautiful above all to us because we surround him with a sympathy without limits, and because beauty is multiplied to infinity when a great number of intellectual wants are satisfied at once.

There is a human beauty, a sexual beauty, a beauty for each age, for each race, for each family, for each individual. We believe too readily—to paraphrase the subtle definition of Voltaire—that the white woman is beautiful to us because we are white, and that to the negro in turn nothing is fairer than his coal-black mate with her thick lips. This is not true, at least so far as the negroes and the Americans of the South are concerned. If the negress or Indian woman is prized in proportion as she conforms to the type of her race, I can affirm that when they have to choose between a beautiful white woman and a beautiful negress, or beautiful Indian, they unhesitatingly give the preference to the first.

Mancilla records in his military journey across the Argentine pampas the following dialogue which he had with a *Ranquele*:*

"Which do you like best, a China or a Christian?"

"A Christian."

"And why?"

"The Christian is whiter, bigger; she has a more delicate skin; she is more charming."

I firmly believe in a type of beauty superior to all the secondary types of beauty—Mongolian, American, negro, etc.—and I always find that when a man of inferior race is exceptionally beautiful he approximates to our Aryan type. We may see this among the Japanese women and among the Caffirs.

Sex introduces such a disturbing element into human morphology that there are two types of beauty—one for man, the other for woman, and that in the same race the male and female are not always equally beautiful. It seems that the special type of each race lends itself better, one to the beauty of the male, another to that of the female. Thus in Italy the men are more beautiful than the women; the contrary is the case in Spain.

The most beautiful women are found, according to my knowledge, among the Spanish and the English. As to those of whom I only know by the report of others, I mention the beauty of the Georgians and the Circassians.

We find admirable specimens of masculine beauty in Italy, England and the East.

* Lucio V. Mancilla, *Una escursion a los Indios Ranqueles*. Leipsic, Brochaus, 1877, vol. ii. p. 277.

The Tungoos women are perhaps the most horrible of all. In many of them the check bones occupy the largest part of the face, and the eyes are but long and narrow slits through which one catches sight of two little black globes without expression.

Among the ugly men are the Australians, the Mocovis of the Argentine Republic (whom I have visited several times), the inhabitants of Fez.

Every race has the feeling of human fraternity; every man born under the sun feels the same impulse of *excelsior*. We see it in the repugnance which many very white mulattoes feel to avowing that they have negro blood in their veins, and still more in the horror which all experience at the idea of resembling apes.

There are some negroes, Australians, and Papuans who pull out, file away, or stain their teeth so that they may not resemble dogs or apes. A low and hairy forehead, a prominent jaw, a nose reduced to a minimum, appear ugly to all, or at least to nearly all, the inhabitants of the globe.

Like the butterfly, who, issuing from its chrysalis stage, rejects as a blemish all vestiges of its larval condition, men everywhere look upward, and touch the earth by the smallest possible part of their bodies.

We, weaving phantasies at will, may make as many human races as there are distinct species; we may modify and upset all our systems and methods of classification: but, despite all, the bipeds who know how to light a fire and to speak, feel themselves to be brothers; despite the learned, they love and they kill each other, but over the corpses of those who succumb they weave again their knots of love.

PART II.

THE EXPRESSION OF THE EMOTIONS.

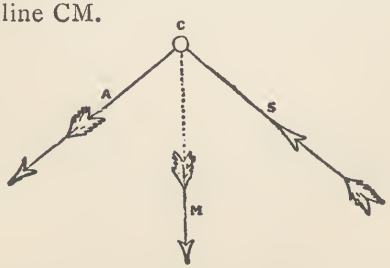
CHAPTER VI.

THE ALPHABET OF EXPRESSION.

IF we would take the word expression in too wide a sense and give it its etymological signification, we should risk the danger of embracing at the same time too many different things, and of making physical expression synonomous with language.

Language is more expressive than any physical expression, but it is not the same thing, although the latter may be a part of language, or even substituted for it. Of this we may at any time obtain confirmation by watching a deaf mute, or two people who, without knowing a common language, have need of communicating their ideas or emotions to each other.

The expression of emotion is one of those centrifugal energies which arise from those great transformers of force which we call nerve centres. A given quantity of movement from without in the form of light, of heat, of sound, is transformed into emotion or thought, which, taking a centrifugal direction, gives place to muscular movements. These movements may be cries, articulate words, or gestures. Generally the energy of expression is only a part of the transformed force—often even a very small part—which accompanies more complex and higher phenomena. The annexed figure represents graphically the way in which the phenomenon of expression is produced. A sensation, S, reaches the centre, C, and is there transformed into *love*, which follows a centrifugal path along the line CA, and a current of expression which follows the line CM.



Thus we may say that the expression is the *extra current* of the emotion and of the thought.

The expression of emotion is one of the most elementary facts of nervous life; it is manifested even in very inferior organisms. Even infusoria, molluscs, insects, have movements which do not directly serve in alimentation, respiration, circulation, or generation, and which are purely expressive phenomena. Physical expression has in the biological economy two diverse and important functions.

It may replace or complete language.

It may defend the nerve centres and other parts of the body against dangers of different kinds.

Like language, physical expression presents many varieties of form; but it is always a more universal language. Words, whatever may be their origin, have always a conventional meaning; thus they are only of value to one who comprehends them and follows their meaning. Spontaneous physical expression, on the other hand, is the language of all intelligent men, and extends its influence beyond the domain of humanity; it is comprehensible to those animals who most approximate to us by the development of their nerve centres. Say to a dog, to a child who does not yet know how to speak, or to a foreigner who does not know our language, the word *brigand*, at the same time smiling benevolently or making affectionate gestures; these three beings, very different in their natures, but all equally ignorant of the sense of the word brigand, will reply to you with an expression of affection. Say to them, on the contrary, the word *dearest* with a expression of hatred or a threatening gesture. You will see them shrink with terror, attempt to escape, or utter complaints. This very simple example is enough to indicate the boundary which separates conventional language from the simple and elementary language of physical expression.

Physical expression, however, has also many conventional signs, the meaning of which it is necessary to know, as these take the place of the words of a certain language. A Lombard, a Frenchman, a German, who found themselves for the first time at Naples would certainly not understand the mute expressions of a Neapolitan, who to say no closes his lips while throwing his head backwards. In the same way many people are not offended when they see a Milanese place his thumb on the point of his nose and stretch the other fingers of the hand towards his interlocutor, moving them alternately; and none of us would get into a passion if we saw this same Milanese cross two fingers at right angles to indicate a certain length, while this gesture would be enough to raise a tempest in the Argentine Republic. We shall not speak in this book of that part of physical expression which is quite conventional, and the study of which goes with that of the study of the deaf mutes. We shall occupy ourselves here with the phenomena of spontaneous automatic expression, which are almost the same in every country in the world, and which constitute a veritable universal language. A caress, a kiss, a kindly smile, are interpreted everywhere

as the signs of love: while the act of gnashing the teeth, that of raising the clinched fist, and others of the like nature, will always be considered as expressions of menace, rage, hatred. There are certainly equivalent forms to express these sentiments, but they are enough alike to prevent equivocation. Two Malays prefer to embrace each other nose to nose; we prefer to kiss with the lips: but no one would take the action of rubbing nose to nose as an expression of hatred; and every form—differing among different people—of kindly and respectful salutation will be always and everywhere taken for what it is meant to be.

But more frequently physical expression, without being substituted for articulate speech, completes and modifies, or reinforces it.

The second function of physical expression is to protect us from danger. A cat, face to face with a dog much stronger than itself, bristles up its fur and enlarges itself so as to simulate a much greater size than it really possesses; in the same way, by threatening with the fist, showing our teeth, rumpling the brows, we seek to make a formidable appearance that we may exhibit all our power of offence.

Many gestures, without really defending us, show our intention of defending ourselves. To close our eyes at a flash of lightning, to raise our arms above our heads when the earth quakes, certainly does not protect us, but it is an automatic expression of defence.

To maintain the thesis that all expression is defensive would be to utter an opinion paradoxical in appearance, but true at bottom. When emotion is strong it may kill us if it does not find vent by means of the motor nerves and translate itself into a phenomenon of expression. In many cases the nerve-centres and, in consequence, life, are endangered by an inability to weep or laugh. We all know the story of the husband who killed his wife by binding her down tightly and tickling the soles of her feet. Many like facts occur every day in the battle of life.

The most eloquent man in the world, if he had to speak in a moment of great emotion with his limbs bound down to his body, would experience an unspeakable torture; his eloquence would be stilled and transformed into disorganized and delirious convulsions. On this account I believe I may formulate a law which marks one of the fundamental letters of the alphabet of expression.

The wealth of the elements of expression is always in close relation with the intensity and the sensitiveness of the psychical act.

A slight emotion leaves us almost motionless, while a very great emotion produces a very hurricane of expressive movements. If by the excess of the centrifugal discharge the muscles remain in a state of static contraction, the excess of expression may simulate tetanus.

Thought, first and foremost a mathematical phenomenon, has nearly always a less expansive expression than feeling.

To convince oneself of the difference of the parts played in expression by thought and feeling, it is enough to compare an orator who is reading his discourse with one who abandons himself to inspiration. In the first case gesture is rare, studied, cold, often out of place and inappropriate. In the second it is vigorous, efficacious, and largely expansive. The effect of words read or spoken exactly corresponds to this difference of physical expression. No book will ever take the place of a speech or of a lesson. If we are at times inclined to hurl anathemas on the worship of our age for parliaments and speeches, we must yet confess that the spoken word is one of the greatest human forces. Every religion and many philosophical schools have been founded by word and by expression more than by books. There may be an absolute identity of ideas in a written and a spoken book; but these ideas, issuing from the burning lips of an inspired man, enter into the brain of the multitudes by way of the ear, which is the high-road of feeling. The written word, on the contrary, is cold; it reaches the intelligence by the eye, which is an intellectual sense, and little sensitive. This perhaps is one of the reasons why the blind are less unhappy than the deaf mute. The latter is deprived of emotion; the other has only lost the sight of forms. The spoken word is apostolical; it is seen, it is felt, it is absorbed, living and palpitating; it is impregnated with human sensations and emanations. I give a few facts, taken from the most varied sources, to maintain the truth of this contention.

Call out in the middle of a crowd: "A conflagration! a conflagration!" or begin to cry: "Fire! fire!"—while at the same time you run off, gesticulating. In the first case many may stop and inquire. In the second there will be a general and irresistible stampede. Gesture is more automatic than speech, and automatically induces imitation. Of this we may convince ourselves by suddenly opening an umbrella in the middle of the street when the weather is uncertain, yet without actual rain, or by putting the hand into the pocket in an omnibus as though to pay the fare. Many umbrellas will be opened and many persons will draw out their pence by the simple force of automatic imitation.

Remember the tumult which broke out one day in a theatre in Germany when by chance the Olympian Goethe happened to be in the balcony. Scarcely had he risen and made a gesture to calm the waves and the pandemonium of the crowd than all was silent as with a spell, and without a word from him. If, on the contrary, he had spoken without rising and making a gesture, the effect would have been much less, and perhaps *nil.*

All great orators have strong power of expression which adds to the efficaciousness of their words. With many a certain gesture, a certain *tic,* is necessary, that their words may flow easily and brilliantly.

Minghetti cannot speak unless he has a paper-knife in his hand. Poor Boggio, of tragic memory, had to raise a leg and worry the bottom of his trousers before he achieved eloquence.

A friend importunate, if any ever deserved the term, writes us an eloquent letter to ask for money, and we refuse. Another comes himself and, with a piteous gesture and a skilful expression, obtains at once what the former failed to gain.

A woman who has resisted a hundred seductive letters will yield perhaps to the first pathetic look, to the first loving caress.

The sympathetic relation between the psychical facts comes perhaps from the analogy of their inner natures, and probably from the identity and relation of the centres of expression which produce them. An intellectual phenomenon raises a thought; an emotion awakens an emotion; an automatic action calls forth another automatic action.

If from individual we pass to great social and ethnical facts we always see the same law verified. The more feeling a nation has, the more rich and eloquent are its methods of physical expression. This can be seen in a picture and sculpture gallery when men of different characters and diverse race stand in the presence of a moving work of art. And yet this interesting scene of comparative physical expression, instead of inciting to an analytical and profound study of the psychical constitution of the different human families, for the most part arouses vulgar impertinences. Italians, of animated expression, say of the English: "They feel nothing!" And the English say of the Italians: "They are buffoons!" Neither of these two impertinences has any foundation. The Italian nerve cell discharges at once the centrifugal energy which accumulates there; unfortunate for it if by the thousand telegraphic threads of expression it should not find as many safety-valves! The English cell is deeply charged, and slowly imprisons the accumulated force. But men to the end of time—instead of studying each other and trying to know each other better, to love each other more, to esteem each other more—will continue to throw in each other's faces these international insults, which are summed up in the more vulgar formulæ: "He is a genius, but he is mad." "He is a happy man, but he is a fool!"

In the expression of the emotions there are some acts which are not directly defensive, but which should be ranged among the numerous phenomena of sympathy which the divers regions of the nervous system present. If we do not always keep in mind the sympathetic automatism of many gestures, we shall never understand one-half of the expression of the emotions. In the same way, unless we study the contrast of our will with automatism, we shall not understand the demi-tints, the varied results of expression.

Here are four different facts, all of which exemplify what we affirm.

A dog looking at a savory piece of meat at once pricks up his ears in the direction of the coveted morsel.

A billiard player, seeing his ball impelled in the wrong direction, throws eyes, lips, often the whole body, into the line which it should have followed.

The tailor, giving all his attention to the cutting of a precious stuff, accompanies his scissors with a synchronous movement of the jaws.

The rower often makes a movement of the lips at the end of each sweep of the oar.

When our attention is directed to a phenomenon for the purpose of observing it, the spontaneous and natural action is nearly always destroyed. This we see nearly every day in the case of yawning, which is promptly stopped by an inopportune observer.

Including all living beings in a general view, we may say that the expression of emotion augments in intensity and variety as the animal rises to a higher scale, and becomes more sociable. The oyster itself has its expression of pain when we sprinkle it with lemon juice ; but from this to Niobe or to the Laocoon there is a long interval.

With the wealth of physical expression wealth of anatomy always corresponds. The expression of the white man is higher than that of the negro, and the latter higher than that of the ape, because the facial muscles are more and more distinct in proportion as we rise from the anthropoid ape to the Aryan. It is very probable that in some great dramatic actors, and in persons who can imitate by the movements of their face the grimaces of animals and the most different emotions, we should find a more delicate and more complete division of work in the anatomy of the facial muscles. Here is what Bischoff has written on the subject :

"In my young chimpanzee, as in the ourang-outang, and in the hylobate, there are just round the curve of the eyelids, the curve of the mouth, and the buccinator, certain muscular fibres to which the names of the corresponding muscles of the human face might be given. Still it would be difficult to justify this identification, because these muscles are not at all isolated from each other.

"The same is the case among many other apes, and I believe that this may agree with the ancient opinion that man is distinguished from all other animals, apes included, by the greater development and more complete isolation of the muscles of the face. The apes, it is true, are great at grimacing, and the lowest passions of desire and of anger are energetically depicted on their faces ; but the physiognomical expression of our face, which renders in so faithful and characteristic a manner every emotion and every passion, excels theirs, as much as the development of facial muscles excels that of the ape's." *

* Bischoff, *Beitrage, zur Anatomie des Hylobates lenciscus*. München, 1870.

Among our domestic animals also expression keeps pace with intelligence ; while the pig and donkey have poor powers of expression, the horse and the dog are richer. The more they approximate to us by their anatomy, the more easily we understand animals, and the more readily they understand us. And so it has been since men and beasts have lived together ; for many centuries before Darwin declared us brothers in the name of morphology, nature had united us in a great biological and psychical fraternity.

CHAPTER VII.

THE DARWINIAN LAWS OF EXPRESSION.

IN the preceding chapter I have attempted to reduce the laws which govern the expression of the emotions to their most simple form, and to trace, so to say, their alphabet. I have certainly not attempted to give all the laws of expression. I shall try to broadly sketch the most important of their details in the rest of this book. Here I desire to rapidly discuss the three fundamental principles on which the expression of the emotions is based according to Darwin. These three laws do not constitute, in my opinion, the principal title of the great English naturalist to glory. But as they are enumerated in an immortal book, which has caused this order of study to make an enormous stride, we ought to know them and examine up to what point and in what way they are in accord with natural phenomena.

1. I call the first law of Darwin *the principle of the association of useful attitudes.* Certain complex expressions are directly or indirectly advantageous in certain conditions of the nerve centres. When these conditions are reproduced, even to a slight degree, this expression is realized by force of habit, even though it may be no longer of any use.

2. *Principle of antithesis.* Certain psychical conditions bring certain habitual actions which are useful. When the nerve-centres are in an opposite condition there is an involuntary tendency to make directly contrary movements.

3. *Principle of actions due to the constitution of the nerve-centres, independently of the will, and up to a certain point also of custom.*

With all the respect due to one of the greatest observers and greatest thinkers of our age, I think these three principles badly formulated and very confused. Nowhere more than here has Darwin shown the defects of his too analytical mind. And yet many believe he was inclined to too wide a synthesis! Wide if you will, but wide as nature is wide, one of whose most admirable interpreters he is.

The first principle is badly formulated. The idea in it is rather stamped than sculptured. As for the second, as well say that the op-

posite causes produce opposite effects, for the cases of apparent antithesis are ultimately but phenomena of sympathy. Unless I am mistaken, we cannot call the third assertion a principle at all. To say that certain nervous currents come in one direction and some in another does not explain anything. To say that pleasure causes laughter and grief causes weeping is to affirm an evident fact, but not to explain it.

If I were allowed to translate the three Gothic laws formulated by Darwin into the more symmetrical form of Latin, I should enunciate these principles as follows :

1. There is a useful expression of emotion, *defensive*.
2. There are certain facts of expression, *sympathetic*.

If, after having ventured this somewhat summary criticism, we pass to the details of Darwin's work, we find therein true discoveries made in a domain hitherto abandoned to empiricism and divination ; and we shall find there a great wealth of details. Here are some :

The closing of the eyelids protects the eye ; but we frequently close them when no danger threatens ; we close them, for instance, if we suddenly hear a loud noise. If we neglect to take account of this automatic tendency to self-defence, half of the expression of emotion remains obscure.

I frequently find an identical, or, at least, a very similar expression for very different sensations and emotions. But this at once leads me to imagine that there must be between these two sensations or emotions a common character in the central phenomenon which is associated with them. We shall return to these facts later on; but we may examine a few at once.

We scratch our head if we feel any sort of irritation there ; but we perform the same action to help us to an idea, or a word which evades us—to help us out of a perplexity.

We raise the upper lip and pucker the nostrils to ward off a bad smell which enters with the inspired air and reaches the mucous membrane ; but we make the same gesture to express contempt or aversion for any one, or anything which offends our dignity or our moral sense.

We rub our eyes to get out a grain of dust or a fly which has got in, and causes us inconvenience ; but we have recourse to the same action to get rid of a painful idea.

We cough to rid ourselves of any phlegm which encumbers the pharynx, the larynx, or the trachea ; we also cough to clear up our ideas, to find the right word or phrase, to extricate ourselves from embarrassment, to gain time. The great Cavour continually did so in his parliamentary speeches.

We put our hands forward (if we have time) when we fall ; but we do the same if in play we fall upon a cushion or a bed, where we could not do ourselves any injury.

We draw back our head from a lighted torch, or from the hands of an over-excited speaker, but we make use of the same gesture to express our withdrawal from a proposition which we cannot accept.

We close our eyes at the sight of a horrible scene ; but we do the same in the dark if our imagination calls up before us a terrible picture.

Analyze these facts well and you will be able to understand nearly all. Sometimes expression is absolutely and purely defensive ; sometimes it is only apparently defensive in the face of an imaginary danger ; sometimes it is sympathetic under the dominion of an emotion analogous to another emotion which expresses itself in defensive gestures.

Many phenomena of expression do not appear to us to have any defensive character in consequence of our ignorance of biology. But Darwin has perfectly explained that the construction of the orbicular muscle of the eyelids in crying protects the delicate organ of sight from congestion. Likewise, to bite the lips, or any other part of the body, to tear one's flesh, or to tear out the hair, may appear to the vulgar but to add pain to pain ; but, on the contrary, these artificial lacerations, causing a diversion from the troubles of the more important nerve-centres, preserve the brain from grave dangers which would result from too vivid painful emotions.

Darwin confesses that he does not see the utility of the trembling which accompanies fear. But, after my experimental studies in pain I find it extremely useful ; for it tends to produce heat, and warms the blood, which under the influence of fear tends to become excessively chilled. In the same way I believe that I have found why, with great pain arising from the sense of touch, or feeling generally, we leave off breathing and only gasp spasmodically. We produce thus a slight anæsthesia of the nerve-centres, and indirectly succeed in rendering the pain more bearable.

Finally, sobs, loud complaints, all forms of groaning are useful, because thereby we excite in those who listen to us a compassion which may be of aid to us. This often occurs with animals, and I have noticed it for my part in America, in the case of the ox, and of a little paroquet (*Conurus monachus*).

Defence and sympathy which govern all expression are always more automatic in the animal than in man, in the child than in the adult. This is a fact not peculiar to the expression of emotion, but is common to all acts of psychical life. The *Sphynx macroglossa* scarcely issues from its chrysalis before it begins to fly on to the flowers and to execute perfectly all those movements which are necessary to keep it suspended in the air and to suck honey from flowers. We, on the contrary, sons of Prometheus—how much work, what study, how much experience we need before we succeed even in carrying a spoon

straight to our mouths! The horse, from the moment of its birth, runs and leaps. We require months and years to learn to draw on a pair of gloves.

However, we find in animals expression which is not directly defensive, but only so by atavism, and which, consequently, is purely sympathetic.

Darwin has the merit of having collected and interpreted many facts of this sort. The dog, before stretching himself on the carpet, turns round several times and digs with his paws in front, as though he would beat down the grass to make a comfortable place for himself. At another time he will scratch at hard soil to try and bury his excrements, although there is neither earth nor leaves to remove. Similarly cats dislike to wet their feet, perhaps because their ancestors were born on the dry soil of Egypt, and they have a tendency to cover every place which is a little damp with mold or dust. Darwin's daughters succeeded in making a young cat go through these movements by spilling some water in a glass placed behind its head.

In automatic expression children are midway between animals and us. Frequently a schoolmaster will punish a whole class which has begun to cough and sneeze because one pupil has coughed or sneezed involuntarily. He genuinely believes that they are all guilty of having coughed or sneezed on purpose. And yet it is nearly always, if not always, an irresistible automatism which impels children to do in imitation what one of them has done in real need. It is the old story of the sheep who all run away from the fold when one runs, and who all enter when the one has entered. And we adults, who are neither children nor sheep, also participate in this animal automatism. The *claqueurs* and *fischiatori* by profession know this well; they often succeed in determining the success or failure of a play by organizing clapping and applause so as to lead the crowd to automatically applaud or hiss. Generals who have commanded in great battles could tell of tragic facts in very diverse fields which happened for the same reason.

The instances of sympathetic expression are more difficult to explain than defensive phenomena, but with patient and deep analysis they too, in the end, may be accounted for.

I should like to arrange them in the following categories:

Imitative Sympathy. This is the most common and the easiest to understand. We yawn, we run away, we look into space, because others yawn, run away, or look into space.

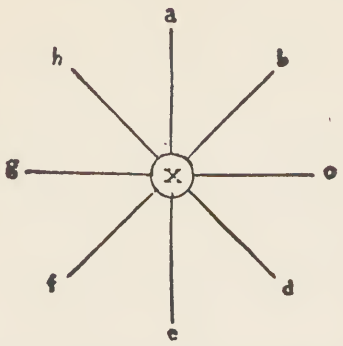
Muscular or Mechanical Sympathy. We say no, first with the head, then with the hand, then again, if need be, with the trunk. We threaten by opening the mouth, by looking askance, by closing the fist, and sometimes by raising the foot.

Sympathy of Functions. The most elementary amorous expression

is located in the pelvis, where the genital organs are situated, then extends to the hand which caresses, and still more, to the mouth which plays so great a part in the pleasures of love.

Obscure Sympathies of the Nerve Centres. These are the most obscure facts of animal expression, and they can only be explained by the future progress of histology. Such are the actions of scratching the head; of closing the eyes to express embarrassment, uncertainty, fear; that of elevating the nose to show contempt.

The general physiology of all acts of sympathetic expression is figured in the following diagram:



A central emotion, *x*, being given, to find why it radiates in the sympathetic centres *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*. This first problem once solved, the secondary problems which follow must be solved:

What does a given expressive movement signify?

What intensity of emotion does it denote?

What æsthetic, moral, intellectual warmth does it indicate?

Is it defensive in reality or only in appearance, or is it sympathetic?

Is it the exact expression of truth, or is it totally or partially simulated or replaced by other disturbing causes?

When for each expressive motion we are able to reply to all these questions, we shall have the right to say that we know it wholly, in its origin, its progress, and in its details.

In the science of nature, it is often more difficult to question than to reply, and a well-put question elicits reply spontaneously and easily.

CHAPTER VIII.

CLASSIFICATION OF EXPRESSIONS—GENERAL VIEW OF ALL PHENOMENA OF EXPRESSION.

WHEN we view a natural phenomenon we may, observers or artists, feel proud at our success in discovering its principal features, the shadows and penumbræ, and especially at being able to reproduce

it faithfully on the page of a book, on a canvas, or in marble.. But our pride falls when we would place this phenomenon in its natural position under its rubric in our system, and make of it another link in the great chain of antecedent and consequent, of cause and effect, of morphological harmonies and dissonances. It is then that our ignorance appears in its humiliating nakedness ; we feel that we are but the modest interpreters of the surface of things, and the system of our classification shows all its weakness. And yet thereby we must always reach the relentless scrutiny of our conscience in which science with modest frankness avows the uncertainty of her conclusions, and in which art renews itself in the pure sources of truth.

This is what we wish to do for the science of expression, in order that we may know precisely what its actual boundaries are, and in order that our work may provide posterity with the balance-sheet of our knowledge upon the subject which we have undertaken to treat.

Let us then begin with a little analysis, so that we may afterwards rise somewhat higher and draw bolder lines. Every phenomenon of expression should be studied in the nature of the emotion which gives birth to it, in the degree of the emotion, in its progress, in the disturbing elements which may accompany and modify its spontaneous expression.

The nature of the emotion is the characteristic and principal element of all expression. We will present in a general view the principal expressions of which man is susceptible by dividing them into three great categories :

Expressions of Sense.
Expressions of Passion.
Expressions of Intellect.

EXPRESSIONS OF SENSE.

Stages of Desire, Pleasure, and Pain.

Needs of nutrition.	Hunger. Thirst.
General organic needs.	Muscular activity. Muscular repose. Sleep. Cold. Heat. Need of oxygen. The zest of living. The pain of living. The pleasure of death. The pain of death. Diverse needs of sense and of excretion.
Needs of special senses.	Expressions relative to touch. " " taste. " " smell. " " hearing. " " sight.

Needs of reproduction.
- Desire to fertilize.
- " to be fertilized.
- " to bear children.
- " to suckle.

Derivative. Expression of modesty.

EXPRESSION OF THE PASSIONS.

Stages of Desire, Pleasure, and Pain.

Feelings relative to self.
- Love of oneself.
- Hatred of oneself.
- Fear.
- Courage.
- Self-esteem.
- Physical vanity.
- Humility.
- Decorum.

Feelings relative to others.
- Sexual love.
- Maternal love.
- Paternal love.
- Filial love.
- Fraternal love and love of humanity.
- Compassion.
- Veneration.
- Religious sentiment.
- Hatred.
- Anger.
- Cruelty.
- Contempt.
- Irony.

EXPRESSIONS OF THE INTELLECT.

Stages of Desire, Pleasure, and Pain.

Attention.
Meditation.
Expression of mechanical work.
" " artistic work.
" " scientific work.
" " literary creation.
" " poetic ecstasy.
" " the work of observation
" " speech.
" " discussion.
" " harmonious work.
Pain of doubt.
Joy of discovery.
Æsthetic pleasures and pains.
Pleasures and pains of injustice.
Stupor.

This cursory view almost gives an elementary analysis of expression, for I have tried to group into natural families the simplest and most ordinary expressions which are associated with the life of the senses, of emotions, and of thought. But it is seldom that a phenomenon of expression occurs in its simplest condition ; more frequently it is combined with others. We have, then, binary and ternary combinations. Here is a sketch of the most habitual compound expressions :

SKETCH OF THE PRINCIPAL COMPOUND EXPRESSIONS.

In the Domain of Sense.

Pleasure and pain.
- In sexual intercourse.
- In child-birth.
- In suckling.
- In itching.
- In the rapid transition from cold to hot, and *vice versa*.

In the Domain of the Passions.

Melancholy.
Cruelty and luxury.
Pride and irony.
Humiliation and irony.
Love and ecstasy.
Horror and compassion.
Fear and adacity.
Vanity and modesty.
Eagerness to possess and cruelty.
Love and rage.
Rage and irony.
Veneration and stupor.
Contempt and rage.
Cruelty and pride.
Physical pain and courage.
Strife and cruelty.
Resignation and joy.

In the Domain of Intellect.

Melancholy.
Ecstasy and mechanical movements.
Exercise of thought and dancing.
Work of education and contempt.
" " " love.
" " " hatred.
" " " pain.
Labor of speech and pride.
" " " humility.
" " " strife.
" " " hatred.
" " " love.
Artistic work and luxury.

A transitory emotion has a fugitive expression which leaves no trace; but when it is repeated several times it leaves on the face and other parts of the body a lasting impression which may reveal to us a page in a man's history. Permanent expressions may be grouped in the following table :

PERMANENT EXPRESSIONS.

Expressions produced by permanent conditions of the organism.
- The consumptive countenance.
- " dropsical "
- " calculous "
- " cancerous "
- " neuralgic "
- " hypochondriac "
- " maniac "
- " melancholy "
- " dyspeptic "

Expressions produced by the abuse of a function or by certain nervous stimulants.	The countenance of the glutton.
	" " " famished.
	" " " libertine.
	" " " muscular exhaustion.
	" " " the dissolute.
	" " due to effects of coca.
	" " " " opium.
	" " " " hashish.
Expressions produced by the repetition of certain emotions or certain intellectual labors.	The melancholy countenance.
	" pessimist "
	" optimist "
	" disturbed "
	" debased "
	" discouraged "
	" audacious "
	" suspicious "
	" defiant "
	" modest "
	" ascetic "
	" chaste "
	" hypocritical "
	" frank "
	" avaricious "
	" despairing "
	" benevolent "
	" misanthropic "
	" giddy "
	" sociable "
	" imperious "
	" ferocious "
	" cruel "
	" meditative "
	" stupid "
	" inspired "
	" ecstatic "
	" frightened "
	" pugnacious "
	" contemptuous "
	" ironical "
	" patibulary "
	" inquisitorial "
Expressions produced by the prolonged exercise of certain professions.	The physiognomy and expression of the priest.
	" " " " soldier.
	" " " " chemist.
	" " " " druggist.
	" " " " sailor.
	" " " " notary.
	" " " " clockmaker.

It seems that after so many tables and rubrics our work of the classification of phenomena of expression ought to be ended ; but we have still to define and to rank certain forms of expression which are independent of the nature of the emotion, and which correspond to the degree of the latter, and still more to certain conditions, transitory or permanent, in which the individual is placed.

Thus the expression may be strong, feeble, uncertain, confused, eloquent, or scarcely perceptible, disturbed, convulsive ; and whatever may be its signification, whether joy or pain, hatred or love, similarly each individual according to his condition of health or disease, of strength or weakness, and according to the permanent con-

ditions resulting from his nervous organization, will express any emotion in a manner peculiar to himself. Thus it has been said of the form of the expression that it depends on age, sex, and race. It is doubtless for this reason that so few artists can express in their works so many different elements, when they have to render in the face or the body of a statue the nature of the emotion, its degree, and all those gradations of the external and of the internal medium. Any one can succeed in representing a laughing child, a dying man ; but there is but one Laocoon, and but one Inconsolable.

The general forms of expression are as follows :

Feeble, strong, violent expression ; uncertain, confused, evident expression ; expression of tension, of expansion ; debauched and dying expression ; disturbed and convulsive expression.

To end our attempt at classification, we have only to point out the analogies, the most frequent cases, in which very different psychical facts of nature are expressed by the same, or at least by a very similar phenomenon. These agreements, *synomyms* of expressions, are in great part here indicated for the first time, and may afford us valuable help in disentangling some of the most obscure laws of human and animal psychology.

SYNONYMS OF EXPRESSION.

Extreme degrees of voluptuousness and of pain.
Pleasures of smell and amorous voluptuousness.
Pains of smell and expressions of disdain.
Pains caused by bitterness and the dumb suffering of self-esteem.
Pleasures and pain of hearing—emotional pleasures and pains.
Pleasures and pains of sight—intellectual pleasures and pains.
Traumatic pains and expression of moral struggling.
Pleasure of feeling well and complacency of self-esteem.
Expression of luxuriousness and cruelty.
Expression of modesty and chastity.
Pains of cold and fear.
Pains of heat and expression of rage.
Expression caused by tickling—pleasures and pains of ridicule.
Expression of intestinal pains and disgust of life, or hypochondria.
Wonder and fright.
Panic, fear, and madness.

CHAPTER IX.

THE EXPRESSION OF PLEASURE.

PLEASURE is one of the most universal and elementary emotions of all living beings. It is one of the poles of animal—and perhaps of vegetable—sensibility. And thus its expression is rich, varied, and characteristic, and one which, it would seem, should have been the

first to attract and engage the spirit of observation of the curious who were first to direct their attention to man in order to study his movements. And yet it was not so: the old works of physiognomists only devoted a few pages to laughter, which seems to have been to them the only expression of pleasure worthy of being studied; and yet in these pages we shall find more astrology and cabalism than genuine and attentive observation. Physiognomy has been an astrological science from its birth, and this original sin has been perpetuated to our own days, for nowhere has a savior appeared to cleanse and to heal it.

The good Cornelio Ghiradelli, of Bologna (the eminent Vespertine academician), in the eighth discourse of his *Physiognomical Cephalogia* (Bologna, 1670), treats of the *laughing mouth and foul breath* (a singular association). He there quotes Aristotle, and distinguishes between the *moderate laughter of a wise man and the immoderate and unruly laughter which Cicero calls* cachinnus, *and which is peculiar to fools.* And he continues thus:

"Laughter is an inarticulate sound produced by the pleasure which one feels at a thing done or said in a ridiculous manner, or which is monstrous or very imperfect. We say, then, that moderate laughter is a sign of wisdom, of serenity, and sprightliness. Immoderate laughter, on the contrary, is a sign of folly or stupidity. Excessive and prolonged bursts of laughter were displeasing to Seneca, to Pythagoras, and to Plutarch, and should be an abomination to every wise and prudent man.

"The Emperor Heliogabalus laughed so loud that when at the theatre his laughter rose above that of the whole crowd. And Boccaccio has said of such laughter: Master Simon laughed with his throat so far open that it would have been easy to have pulled out his teeth.

"Democritus was surnamed Gelasinus, because of his inextinguishable laughter; laughing continually at everything, he enlarged his mouth up to his ears; his teeth were always seen; his face always wrinkled with smiles. Of him Juvenal said:

"*Perpetuo risu pulmonem agitare solebat*
Democritus. . . .

"Zoroaster, the inventor of magic, was born laughing, as Pliny attests, lib. vii., cap. xvi.

"He who laughs out loud is brazenfaced, says Rasi; and those who laugh till they cough or so as to lose their breath are tyrants. If the voice alters in laughing, says Michael Scot, it is a sign arrogance, of avarice, of tyranny, of falsehood, and of treachery.

"He who has thin lips, and with a joyous face laughs little, will be voluptuous; the mouth which is always laughing is the sign of a wicked, lying, perverse, dissimulating, and malicious man, whom no one should

trust, says Albertus Magnus, for laughter in the mouth, corresponding to the eyes, is always bad, and is proper to women.

"Moderate laughter indicates a benevolent, conciliatory man, prudent in all, says Rasi. Michael Scot says they are skilful, sagacious, of keen minds, intelligent, and industrious.

"Isocrates writes that Plato had such grave manners, and showed so much reserve in his face, that he was never seen to laugh, as too was the case with Clazomenes. We read that Crassus was of so severe an aspect, and of such austere manners, that he never laughed in his life."

The Jesuit Niquetius,* in his chapter dedicated to laughter, after many quotations nearly always in its favor, already gives us a little bit of physiology:

"... repentina fit dilatatio cordis ac magna vitalium spirituum effusio quae confestim musculos thoracis et diaphragmatis concutiunt et titillant ad motum harum partium sequitur motus musculorum, qui a lateribus buccæ sunt, fitque ille oris deductio, quam risum vocamus, idque ad exprimendum animi gaudium; de his, qui plura volet, legat præclarum tractatum Elpidii Berretarii Priscensis de risu.

"Ad risum proclives maxime sanguinei et cholerici quia calidiores sunt et apud Græcos risus dicitur γέλως ab ἕλη, id est calor."

Niquetius disputes the ancient opinion according to which the spleen is the cause of laughter, an opinion which arose spontaneously from the pain felt in the spleen after excessive laughter, or perhaps imagined as a pendent to the theory which makes the liver the seat of pain:

"*Cor sapit et pulmo loquitur, fel commovet iram.*

"*Splen ridere facit, cogit amare jecur.*"

And elsewhere—

"*Quid faciem? Sed sum petulanti splene cachinno.*"

Having exhausted his small store of physiology, Niquetius does as others do and falls back upon pure cabalism:

"Pueri, mulieres, fatui ac quilibet inexperti facile rident quia illis omnia nova ac novitas risum facit. Tyrinthii, quum φιλογλωτες essent, et hoc nomine a vicinis male audirent, Delphicum oraculum consuluerunt respondit Pythia ita tandem eos hoc malo liberandos, si Neptuno taurum immolarent et cum ἀγέλαστοι in mare projicerent; illi, re deliberata, pueros omnes hoc sacrificio abegerunt ne quod esset ridendi periculum. . . ."

A little-known Spanish writer† had launched his shafts against the excessive laughers before Ghiradelli and before Niquetius:

"Those who laugh easily and in great bursts have large spleens, and are naturally foolish, vain, stupid, inconstant, and indiscreet.

* *Honorati Niquetii e Societate Jesu, Sacerdotis, Theologi, Physiognomia humana.* Libri iv. distincta, editio prima. Lugdini, 1648.

† *Hieronymo Cortes, natural de la cuidad da Valencia, Phisonomia y varios secretos de naturaleza.* Barcelona, 1610.

"Those who laugh little and with moderation are prudent, astute, discreet, loyal, constant, and of brilliant intelligence."

I will not cite Cicero, who said in his *Tusculanes*: *

"*Si ridere concessum est, vituperatur tamen cachinnatio.*"

Catullus had also said more severely:

"*Risu inepto res ineptior nulla est.*"

But earlier than the philosopher and the poet, Ecclesiasticus had proclaimed:

"*Fatuus in ridens exaltat vocem suam, sapiens autem vix tacite ridebit.*"

And in Proverbs:

"*Risus abundat in ore stultorem.*"

To all these wiseacres and proverb-makers I should like to present our contemporaries Vogt and Pasquale Villari: the former is fat, the latter is thin; both are men of genius; both laugh continually and heartily. Vogt, who has two enormous lungs above the diaphragm, and an enormous stomach below, laughs till he shakes the house and endangers its solidity. In this he reminds us of Balzac, who, like him, had a big stomach, and whose laughter shook the window panes.

The astrological and divination tendency has been perpetuated into our own days. If you open at hazard the first volume to hand of a common physiognomist—for example, Lepelletier—you will find statements of this sort:

"*Noisy and prolonged laughter:* . . . Having made a sufficient number of careful observations, we shall not hesitate to acknowledge that this sort of laughter, if we suppose it to be natural, indicates the following moral conditions: The most ordinary intelligence; a light, futile, heedless, versatile, jovial mind, with little inclination for the serious; a simple, ignorantly wondering character, sometimes utterly stupid (poor Balzac!), common, coarse, ill-taught, without reserve, without dignity (poor Vogt!), attracting attention everywhere, and nowhere appreciated; intemperate, sensual, greedy, nearly always led away by the more or less vicious impulses of instinct, rarely subject to the wise promptings of reason (poor Villari!)."

Enough. The true physiology of laughter begins with the great naturalists and great biologists of our own time.

Among them the first place belongs to Darwin, who has investigated the first forms—the dawnings of laughter in the animals which most resemble ourselves.

The chimpanzee is sensitive to tickling; under this stimulus his eyes become brilliant, the corners of his mouth are drawn backwards, his lower eyelids slightly wrinkled; and at the same time he emits a sound which corresponds to our laughter. Tickling produces the

* *Tusculan.* lib. iv. See also *Clement of Alexandria*, Pædagogia, lib. ii., cap. v.

same effect in the orang-outang. Duchenne several times observed a sort of smile in an ape when he offered him a tempting morsel. The *Cebus Azaræ*, when he is pleased, emits a peculiar murmur, and the corners of his mouth are contracted backwards. An analogous expression has been observed in the *Cebus hypoleucus*, and in the *Inuus ecaudatus*. Darwin has also observed the expression of pleasure in two or three species of *Macacus* and the *Cynopithecus niger*. The former throw back their ears and emit a peculiar sound; the *Cynopithecus* draws backwards and upwards the corners of the mouth and all the skin of the head, in such a way that at the same time the eye-brows are raised; and in this movement he shows his teeth.

I have also seen the ouistitis of Brazil, which I have had with me for several months, express their joy by throwing their ears backwards and raising the corners of the mouth.

Such are the rude beginnings of the human expression of joy. The expression of this is very rich, and we will decompose it into its elements according to the method which we have already adopted for pain.

SYNOPTICAL TABLE OF THE EXPRESSION OF PLEASURE.

Muscular contractions of the face and respiratory muscles.	Elevation of the corners of the mouth (smiling). Wrinkling of the lower eyelids and of the neighborhood of the eye. Inflation of the cheeks. Dilatation of the wings of the nose. Laughing. Closing the eyes. Throwing back the eyeball. Grinding of the teeth. Trismus.
Muscular contractions of the neck, the trunk and the limbs. Convulsions.	Rhythmic movements of the neck. Elevation of the shoulders. Diverse contortions of the trunk. Diverse expressive movements of the arms. Clapping with the palms of the hands. Stretching the legs apart. Stamping with the feet. Various sorts of springs. Dancing. Convulsions of an epileptic nature.
Vasomotor and sensitive phenomena.	Blushing of the face, and more rarely of the whole body. Pallor (rare). Sparkling of the eyes. Tears. More abundant salivation. Involuntary emission of urine.
Disturbance of the voice and psychical phenomena.	Sighs. Rattle. Cries. Noise similar to that of snoring. Sobs. Singing. Dumbness. Fluent and unaccustomed eloquence. Delirium. Unaccustomed benevolence.

Phenomena of paralysis. { Paralysis of some or of all the muscles of the eye. / Strabismus. / Fall of the lower jaw. / Swooning and syncope.

If instead of an essay I were writing a treatise on physiognomy and on the expression of the emotions, I should have to study all these elements expressive of pleasure one by one—elements which in reality may be seen either isolated or grouped together in diverse ways. I shall content myself here with a rapid examination of the most common and most characteristic.

The first of all is the raising of the corners of the mouth, always accompanied by certain wrinkles round the eye and an inflation of the parts of the cheeks nearest to the nose. These three movements combined constitute the smile, which may be hardly perceptible, and which passes by insensible degrees into laughter. This mechanism, characteristic of pleasure, may be studied by following the development of a tactile sensation which approaches the voluptuous. Scarcely is pleasure manifested than the elevator muscles of the upper lip irresistibly contract and the smile appears. The rough artists of the most savage peoples have observed this. I possess two Maori idols which express the two fundamental images of pleasure and pain. I should have reproduced them in this book had not two large fig leaves been necessary to conceal certain details of these coarse wooden statues. In the one representing pleasure, the corners of the mouth are raised; in that representing pain, they are, on the contrary, drawn downwards. As soon as the smile is accentuated, and the large zygomatic muscles strongly contracted, wrinkles are formed round the lower eyelid. In adults and old people they also form at the outer corner of the eye. At the same time the eyebrows are somewhat depressed, which proves that the upper part of the orbicular muscles contracts as well as the lower. When the smile is very marked, and still more when one laughs, the cheeks and the upper lip are inflated, the nose seems to get smaller or, rather, shorter, the upper incisors are shown, and at the same time a naso-labial wrinkle forms which passes from the wings of the nose to the corner of the mouth. In adults and old people this wrinkle is double.

In very marked smiling, and still more in laughing, the eye becomes brilliant, because the lachrymal secretion is more abundant, and it appears larger, perhaps because it is expanded by the contraction of the orbicular muscle, perhaps (as Piderit admits) because the eyeball contains more blood and other humors.

In addition to these phenomena a feature of laughter is the deep inspiration, followed by a frequently interrupted expiration and accompanied by a peculiar and characteristic noise. This is always an accompanying phenomenon of the diffusion of any expression which passes from an inner muscular centre to an outer concentric circle. As

the pleasure increases, and with it the emotion is augmented, the muscles of the face no longer suffice for its expression : the diaphragm and the respiratory muscles of the thorax come to their aid.

In laughter, the mouth opens more and more, many of the teeth are exposed, until, the emotion always increasing, the muscles of the limbs and of the trunk take part in the performance, as much to discharge the centrifugal current which is developed as to protect the viscera of the belly, which are too violently tossed about by the rapid and energetic contractions of the diaphragm. It is then that the head is thrown back, afterwards the trunk ; that the face and neck get red, that the veins swell, that the eyes are flooded with tears which even flow over the cheeks. At the same time the hands are carried to the sides of the chest, over the epigastrium or other parts of the belly ; sometimes one may rest the whole abdomen against a wall or against any resisting body, or may roll on the ground.

Laughter, which in its initial stages is pleasant, may become so violent, if prolonged, that it constitutes a veritable convulsion impossible to dominate even by an effort of the will. It is then that great pain may be felt at the nape of the neck, and unpleasant sensations in the belly and at the diaphragm, and that there may be a loss of urine ; the latter is more frequent with children and with women.

Darwin was able to verify that this laughter to the point of tears is found among Hindus, Malays, the Dyaks of Borneo, Australians, Caffirs, Abyssinians, and among the Aborigines of North America. For my part I have seen it in many negroes of different tribes, and in the Indians of South America.

The great English philosopher asked himself whether laughter was an exaggeration of the smile, or if the latter was the last vestige of an ancient hereditary habit—that of laughing boisterously. I think it probable that both laughter and smiling are as ancient as man, and that either is produced according to the degree of the emotion. We have a proof of this in the fact that children smile before they laugh. In my five children the first smile appeared forty or sixty days after birth, while laughter was manifested, at the earliest, in the third month. One of the sons of Darwin smiled at the 45th day, and laughed at the 113th. Another of his sons smiled at the same age, and a third some days earlier.

Laughter is the most characteristic expression of the pleasure of ridicule; but it also accompanies tickling and pleasures which are affecting in their acute stage. Voluptuousness only very rarely provokes laughter, and only in its paroxysms ; then it is but a spasmodic or cynical laughter, accompanied by a sort of rattle or gnashing of the teeth.

Children and women laugh more than men and adults, because they are more excitable, and the moderating power of the cerebral hemispheres is less. When in perfect health we laugh at a trifle; when in

ill health or bad humor nothing can succeed in calling forth a laugh. Laughter is frequent in idiots and in certain special forms of mental alienation. If we add to this that many people, devoting their life to profound study, or to the search after an elevated ideal, are necessarily serious, we shall see the reason, or rather the excuse, of the proverb according to which *risus abundat in ore stultorum.*

We have already seen that certain great men laugh readily and noisily; but it is right to add that laughter corresponds more closely to the moral character, and to the condition of health, than to the degree of intelligence. The haughty, the vain, the awkward laugh little so that they may not compromise their personal dignity. I think that the serious character of the Spanish nation depends on this. Also the envious, the wicked, the malevolent rarely laugh, because they are impregnated with bile, and are always morose. To think, to do, to remember evil, such is the daily occupation of these unfortunate beings who are always constrained to hate and to censure, and all this is the very opposite of laughing.

Laughter, easy, copious, and frank, indicates a good soul devoid of vanity. This is one of the least misleading axioms of physiology. The hypocritical education of our age teaches us to restrain the expansion both of grief and of joy, and we grow unaccustomed to open-hearted laughter. Add to that that many ladies laugh little lest they should have precocious wrinkles, while others laugh too much, and on every pretext, that they may show their beautiful teeth.

Cynical, strident laughter may sometimes be the expression of hatred or intolerable suffering; but it should never be confounded with joyous laughter. The sound may be the same; the diaphragm and the thoracic muscles present the same contractions; but the face has quite a different expression, and we stand aghast before a picture which combines the least harmonious colors and the most horrible grimaces. Thus the famous "laughter of the damned" is one of the battle-horses of theologians and preachers. It is an expression taken from nature.

Laughter and smiling are very expansive forms of expression. The character of expansion is truly one of the most general characters of all agreeable manifestations. This is so true that the oldest observers, even the most superficial, were compelled to notice it.

Ghiradelli says that pleasure extends even to oysters and to sponges . . . "to zoophytes and animate plants, like the oysters and sponges, which contract as an effect of pain, and which dilate with joy to the point of opening." And Niquetius, in his first description of laughter, writes—"Voluptatis primus et maxime proprius effectus est dilatatio cordis sanguine et spiritu ad exteriores partes copiose effuso, unde et nonnullos gaudio, propter nimiam spirituum jacturam, mortuos esse legimus. . . ."

The first movement of pleasure is expansive, centrifugal; the first movement of pain is centripetal, as though one entered into oneself.

Joy makes us hurry from the house, pain makes us enter it; joy makes us open the window, pain makes us close it. Joyous, we seek light, movement, noise, men; unhappy, we want darkness, rest, silence, solitude. It is a general law which admits of exceptions, like all others; but these exceptions are easily explained by the action of disturbing causes. It is a law which governs individuals and societies, and which should inspire art. Stand at the window; look at this group of men, women and children who gather round something which you cannot see. They are silent, motionless, for a catastrophe has occurred; they are looking at the corpse of a man who has committed suicide. Another time, at the same window, you see a tumult, people who are shouting and dancing; all is movement, all is uproar; for it is a holiday, and joy is carrying them all away in a tumultuous storm of muscular expansion.

I have studied in my children the effect of a sudden joy. After the momentary immobility caused by surprise, they laugh and at the same time stamp their feet in cadence, clap their hands, jump, dance, although they may never have witnessed a like expression in any living being.

Look at a child who has just been given a new and desired plaything; he will jump first on one foot, then on the other; he claps his hands in cadence. This beautiful picture of infantine joy reveals to us one of the first sources of music, perhaps one of the most wonderful creations of the human brain. Pleasure has engendered music—music, by a marvellous reaction, gives birth to pleasure, and this in in its turn expresses itself in rhythmic muscular movements, which are the alphabet of dancing. From the cadenced beating of the feet and hands to the invention of the tambour, the tambourine and the cymbal, there is but one step. The savage but rythmic noise revives joy and creates music, which in its pathological forms brings us back to a savage noise. Darwin having asked a child less than four years old what it understood by good humor, the child replied: "It means laughing, talking and kissing," thus revealing to us in its *naive* reply a chapter of psychology.

In the explosion of joy the affective sympathies awaken by their influence the most excitable parts of our brain, those where the condensed energy is always ready to find vent in expression. Thus Petherick said the negroes on the Upper Nile rubbed their stomachs a they looked at certain coveted glasswares; and Leichardt said the Australians alternately open and close their mouths, as though they were enjoying the flavor, as they admired his horse, bulls and especially his dogs. Thus it is that the Greenlanders gulp in the air when they are pleased, as though they were swallowing a delicious morsels. To

these facts I shall add others which confirm this law in different domains. Libertines, to express any pleasure, lick their lips, caress their cheeks, or have recourse to some other sexual expression ; and people passionately fond of music give a harmonious expression to every joy.

Among the elements of the expression of pleasure enumerated in our analytical table, some are characteristic of sexual voluptuousness. I will mention among these the turning upwards of the eyeball, so as to hide the cornea, the gnashing of the teeth, trismus, epileptiform convulsions, sighs, rattle, groans, bellowings, sobs and such like ; these phenomena are among the more bestial—that is to say, the more automatic and irresistible—and education exercises on them but little or no influence. Here the intelligent man is completely submerged in the great sea of the animal fraternity ; the horse, the ass, the man have often the same way of expressing erotic enthusiasm.

The different movements expressive of pleasure may be grouped in such a way as to form pictures characteristic of certain emotions or special conditions of our organism.

I shall mention here some of the most known and the best defined, that they may serve to guide the artist and the psychologist.

Physiognomy of Good Humor.—When health is perfect, when no care troubles our serenity, to feel oneself living is a pleasure in itself. This pleasure is expressed by an expansive smile, by a permanent tonicity of the muscles of the face and slight brightness of the eyes; it is the face of children in good health ; it is the joyous expression of a brave man who is well. Before such beautiful representations of life we cry : What a laughing face ! What a picture of contentment ! It is a pleasure to look upon it !

Physiognomy of Tumultuous, Delirious, Mad Joy.—This is seen in sudden and violent joy, especially when the mind is not prepared for it. The emotion spreads tumultuously and rapidly from one circle of expression to another. Smiling and laughing, convulsions and cries, song and dancing scarcely suffice to provide for the letting off of the continuous and vigorous currents which rise from the nerve-centres. An almost constant character of this expression is to transform the affective energy into acts ; there is felt an irresistible necessity to embrace, to kiss whatever is near, whether it be an animal or inanimate object. The artist must never forget the force of expression which accompanies muscular disturbance in representing human joy.

Physiognomy of Satisfied Pride.—When man rises in the scale of rank, whether by his money-bags or in a vanity-inflated balloon, he experiences an intense and continuous joy which impresses a permanent and very characteristic expression on his physiognomy. Just as a cat bristles up her fur and inflates herself to appear larger and to frighten a dog who threatens her, so a man, full of pride, satisfied at

the rank in which his eye finds itself, inflates his cheeks, breathes frequently and powerfully, sticks out his paunch if he has one, the anterior part of the abdomen if he is thin, holds up his head, walks noisily —in a word, he seeks to appropriate as many of the sun's rays as he can, and to attract in every fashion the attention of his inferiors. It is not without reason that in every language inflated signifies proud, and to inflate oneself, to grow proud.

A Joyous, Epicurean, Bacchic Physiognomy.—This is the exaggeration of good humor, with a strong tinge of sensuality, brute stupidity, and libertinism.

All gradations are possible, from the lowest expression of gluttony to the higher and universal epicureanism. A gleaming and warm skin ; a half-closed mouth, always expectant of light kisses or savory morsels ; half-opened and slightly troubled eyes, looking into space as though forever contemplating smoking stew-pans and tender viands; the heavy murmur of a turgid blood below a satisfied and still more turgid stomach ; the beatitude of a naked Silenus borne on the shoulders of naked Bacchantes ; the tempestuous bubbling of a painful digestion ; a peaceful sloth of ideas ; perpetual desires of well-filled tables and well-warmed beds ; a revérie of kisses and liquors ; a bestial fermentation in the great vessel of human life : such, broadly sketched, are the anatomical and expressive features which have inspired artists in their creations of Bacchus, Silenus, and certain Don Juans.

Some of these pictures may represent permanent expressions; others only correspond to passing states. The expressions of tumultuous joy and of voluptuousness are transient ; on the other hand, a bacchic expression, that of satisfied pride, and, above all, that of good humor, may be permanent.

If an artist wished to portray in five large pictures the different periods of human life, represented by their most characteristic joys, the following lines might inspire and guide him :

1. *Infancy and Childhood :* Good humor, consciousness of perfect health.

2. *Adolescence :* Heedlessness, muscular intoxication.

3. *Youth :* Joys of love ; contemplation of the world through rose-colored glasses.

4. *Adult Age :* The pleasures of strife and of satisfied self-esteem.

5. *Old Age :* The tender joys of affection, and the melancholy of tender memories.

While studying the expression of pleasure I have been able to note the same law which I had already noted in the expressions of pain. I have found that the pleasures of specific senses had an identical or analogous expression to those of other emotions from a different or higher origin.

The specific pleasures of sight, as some of the more elevated joys of the intelligence, are expressed by widely-opened and brilliant eyes, by the head held upright and attentive. Study the attitude of any one contemplating a beautiful scene in nature, and you will recognize that it is like that of the poet who creates and of the philosopher who is seeking.

Examine, on the other hand, the concentration of one who is enjoying good music. You will see that his expression is in every way similar to that of the tenderest joys of the heart. Let a painter go into a theatre when Patti is singing, and the atmosphere vibrating with the sweetest accents of Donizetti or Bellini ; let him watch in turn the faces of the audience, and he will find there pictures of wondrous beauty.

The expression of the pleasures of taste is very coarse, but there is none the less its analogue in the expression of the joy of wealth ; perhaps because the mouth is the slot of our money-box, and receives the tribute of all our receipts, and because the tasting of a delicate morsel is very like the pleasure of fingering gold and bank-notes.

The pleasures of smell have an expression almost identical with that of voluptuousness ; doubtless because this sense and the genital organs are in close connection. * Make the chastest woman smell the flower whose odor she likes best, and note her expression. Without willing or knowing it, she will close her eyes and breathe deeply ; and if she is very sensible, she will tremble through her whole body.

The passion of certain toothless old people for snuff is certainly a pleasure of smell. But this exception confirms the rule, for at the bottom of this gross expression there is always a sensual tinge which recalls forms of sexual pathology. For the rest the pleasure of snuff is not only concerned with smell, but also with touch, and includes a narcotic effect.

The pleasures of touch are confused with those of voluptousness, and constantly present an analogous expression. But they are nearly always complicated by a muscular exertion, which gives to these pleasures an expression identical with, or at least similar to, that of resistance, action, strife.

For this reason artists would do well more frequently to visit the workshops of smiths, carpenters, turners, and all workmen who employ their hands in transforming and fashioning material. In these pictures of expression they will find abundant material for their highest inspirations.

It is in the lower part of the face, and still more round the chin, that the expression of character and of action is concentrated. The play of this centre of expression follows in sympathy the intelligent and rhythmical movements of the carpenter, of the smith, of the turner. Is is almost impossible to plane, to saw, to bore, without the face assuming an active expression of work and energy. Certain workmen

* Mantegazza, *Fisiologia dell' amore*, p. 176.

who are very expansive or very nervous present sometimes, while in the performance of their manual labor, heroical expressions which the artist would find again on battle-fields and in parliaments, if on these rare occasions, in these bloody combats or strife of words, it was possible to maintain that composure and the spirit of observation which, on the other hand, are very easily preserved in the workshop of a turner or of a smith.*

CHAPTER X.

THE EXPRESSION OF PAIN.

IN my *Physiology of Pain*, published at Florence, and illustrated by an extensive atlas of photographs, I devoted the fourth part of the work to the study of the expressions indicative of pain. In these pages I collected the fruit of long and patient observations, and of many cruel experiences. Here I shall but broadly indicate the most important conclusions, in order that these chapters on expression may not present a deplorable lacuna. When a man has consecrated all his life to the study of man, he is obliged to touch upon the same subjects again in the different works which he publishes, and some repetitions are inevitable.

The expressions of pain are extremely numerous, but they may be summed up in the following—

SYNOPTICAL TABLE.

Muscular contractions.	Of the face. Of the trunk. Of the limbs. Of the cremaster. Of the elevators of the hairs. Partial / General Tonic / Clonic Trembling.
Paralysis.	Of certain muscles of the face. Of the limbs. Of all voluntary movements.
Respiratory troubles and sounds.	Voluntary suspension of respiration. Involuntary " " Prolonged expiration. Interrupted expiration and inspiration. Sighing. Yawning. Complaining. Sobbing. Groaning. Cries.

* Mantegazza, *Fisiologia del piacere*, p. 10. Milan.

Troubles of the secretions and of digestion.	Tears. Involuntary loss of saliva. Involuntary emission of urine. Vomiting Diarrhœa. Perspiration.
Peripheral vasomotor phenomena.	Paleness of the face. " of the whole body. Blushing of the face. Urticaria. Erythema. Erection.
Psychical troubles.	Unwonted benevolence. Access of passion and hatred. " of religious feeling. Dumbness. Voluble and unwonted eloquence. Delirium. Rhythm of thought and of word.

It is seldom that these elementary forms of the expression of pain occur isolated in nature; they are nearly always combined in different ways, forming certain pictures which resemble each other more or less according to the nature of the suffering, and still more the character of the patient:

Expressions of reaction.

Expressions of paralysis.

Mingled expressions of pain and of the feeling which has produced or which accompanies it.

Expressions of Reaction.—These are the most common ; they accompany all slight pains, and the beginning of great pains. The centrifugal currents escape along the different nerves, and produce there an infinite number of movements: contraction of the facial muscles, agitation of the limbs and of the trunk, complaints, sighs, sobs, erection of the hair, threatenings to real beings either present or absent, or even to imaginary beings.

All this complication of movements has a twofold object—to release the nerve centres from the excessive tension which afflicts them, and to struggle with the pain.

Expressions of Paralysis.—These are nearly always caused by over strong or protracted pains. Sometimes the suffering is so unexpected and so violent that it produces paralysis without reaction, and one may be suddenly smitten with swooning, syncope, and finally death.

Outside these cases, which, happily, are exceptional, the prostration of grief is expresssed by yawning, by paleness, by involuntary losses of saliva, of urine, of fæces, by the dejection of the face.

Mingled Expressions of Pain and different Feelings.—The diversity of the effects which pain produces on the muscles of the human body comes generally less from the degree of this pain than from the feeling which produces or accompanies it. Thus, by the gestures of a man in pain, we rapidly guess whether he is suffering from a tooth or a

corn ; in the same way, paternal affection, self-esteem, and the feeling of propriety when wounded unite their own particular expression to the expression of pain.

Muscular Contractions.—Disregarding the very rare cases in which a general paralysis is suddenly provoked by an excessive pain, the expression of pain may be said to be always accompanied by muscular contractions. These may be limited to a small number of the muscles, or to several groups, or extend to all the voluntary muscles in such way as to simulate tetanus, or a general convulsion.

Different circumstances may contribute to make one muscle contract rather than another, but that depends especially on the seat, on the nature, and on the degree of the pain.

The muscles which serve most frequently to express suffering are those of the face, then those of the neck, of the trunk, of the upper limbs, and finally those of the lower.

The most frequent contractions are those of the superciliary muscles, and the depression of the lower lip ; also the wrinkling of the brow and the depression of the mouth are among the most constant signs of the greater part of the expression of pain.

The contraction of the muscles used in mastication is also very habitual, and gives to the mouth a character of resolution and haughtiness. While the mouth closes with energy, the hand closes also, and in the gravest cases, both hands.

Convulsions are oftenest seen as the expression of pain in the extreme paroxysm of moral suffering, and nearly always coincide with the complete collapse of patience, of dignity, and of many other virtues. Here are some forms of these convulsions expressive of pain :

The alternate raising and lowering of the lower jaw, but without the teeth meeting.

Spontaneous fibrillar contractions of many muscles of the lower limbs, of the arms, and also of the trunk.

Partial convulsions of the muscles of half of the face, after which the mouth is left awry.

Convulsions of the frontal and ocular muscles.

Convulsion of the superficial muscle of the neck, and of the sterno-mastoids.

Clonic convulsions of the abdominal muscles.

Trismus.

Different forms of tetanus.

Hysterical projections of the limbs and trunk.

Paralysis.—This always accompanies intense and prolonged pains. It must be that in one way or another the nervous energy should be sufficiently exhausted to momentarily suspend the faculty of innervation. One of the simplest forms is an inability to close the mouth ; one of the most complex and the gravest is the relaxation of all, or of

nearly all, the muscles of the lower limbs and of those which keep the body straight.

Troubles of Respiration and Cries.—Respiration is one of the functions most deeply disturbed by the action of pain. As it is discharged by means of certain movements, the disturbances which it undergoes indirectly become the expression of our suffering.

When the moderating influence of the cerebral hemispheres is at its maximum, we have the voluntary arrest of respiration, the exaggeration of the act of inspiration, spasmodic contraction of the diaphragm, of the scalenes, of the external intercostals, of the sternal portion of the internal intercostals, of the elevators of the sides, of the serratus posticus, of the sterno-mastoid, and, in the case of supreme struggling against pain, the energetic contraction of the elevator of the angle of the scapula, of the trapezium, of the little pectoral, of the great pectoral, and of the serratus magnus.

When the moderating influence of the cerebral hemispheres is very weak, we have, on the contrary, a rapid, gasping respiration, tumultuous movements of the voluntary muscles, an exaggeration of the act of expiration, a spasmodic contraction of the internal intercostals, of the infracostals, of the triangular muscle of the sternum, and also, in the gravest cases, of the external oblique, of the internal oblique, of the transversalis and of the sacro-lumbar muscles.

Sighs, Groans, Cries, Yawning.—The sigh is generally an element expressive of pain, even though it also accompanies some of the most vivid erotic or affective pleasures. But most frequently it interrupts from time to time long and dumb grief, and is a sign of moral, rather than of physical suffering.

The sigh has only to be raised a tone to become a groan, which generally accompanies, while prolonging, expiration.

The groan may become a cry, but this cry is nearly always the automatic and spontaneous expression of very acute physical pains, or of intense and sudden moral pain.

Yawning expresses the most different things, such as hunger, thirst, and, especially in women, the need of physical love; but in the expression of pain it is an element which is expressive of weariness.

Weeping.—This is an element of the expression of pain which at once embraces the whole field of muscular disturbances, and invades that of the secretions. In fact, we find therein at once the contraction of several muscles of the face, of the thorax, of the belly, and an abundant secretion of tears, which, overflowing the lachrymal duct which should lead them into the nostrils, issue over the lower eyelid and flow down the cheeks.

Darwin has studied with much tact the expressive mechanism of tears;* he has remarked that in children tears are often preceded and

*Darwin. *The Expression of the Emotions in Man and Animals*, p. 147. London, 1872.

accompanied by an intermittent and spasmodic occlusion of the eyelids, from which results a tolerably strong compression of the eye, which, according to him, effects its protection from sanguine congestion.

Peripheral Vasomotor Phenomena.—The pallor of the face, and sometimes, but rarely, that of the whole body, accompanies sudden terrors, the announcement of great misfortunes, and also acute and rapid physical pains.

Redness of the face always accompanies the weeping of the child; but it is often also observed in youth and in the adult.

Men and women express their pains differently, even when they are of the same degree. The differences become greater in proportion as we rise in individual and ethnical rank.

Generally, grief is translated in women into stupor or violent reactions; tears are very frequent. The masculine temperament, more courageous and energetic, gives to a man's expression of grief the character of resistance. The man who suffers protests against pain; he utters threats and imprecations on nature and on God. The closed fist stretched towards heaven is the virile expression of some very intense pains. In the woman, on the contrary, the compassionate form prevails, and the groan is the most habitual form of expression.

In women the predominance of benevolent and religious feelings gives to the expression of pain the character of pity and of charity. In man on the contrary, egoism prevails even in the domain of the passions. The woman who suffers, prays and performs acts of charity; the man most often blasphemes and menaces.

Age, still more than sex, modifies the expression of pain. Little children only experience physical pains, which they always translate in the same way—by tears and cries.

When self-love, jealously, the love of property, have appeared in the child he becomes capable of experiencing more pains; he continues to express them by cries and by tears, but his tears flow in different ways, sometimes continuously, sometimes intermittently; sometimes he only whines, sometimes he sobs.

In proportion as the child grows, its expression of grief acquires new characters; tears are less frequent and replaced in part by sighs, sobs, groans, and cries. In the more intelligent, as the dawn of expressions of a more elevated order, we note the appearance of the sardonic or ironical laugh, or a melancholy sadness. These forms, already very æsthetic, become more and more refined in the period of adolescence and first youth, and attain during this time of life to supreme beauty.

The young man weeps but very rarely; the mature man has ordinarily completely unlearned the habit. But directly the nervous centres are weakened a tendency to tearfulness is noted in the eyes, which signifies the first steps in the descent of the parabola of life.

Generally, concentric mute expressions with feeble reaction are proper to adult age, because then experience has rendered us less sensitive, or because self-esteem and the sense of our own dignity intervene to moderate the expression of pain. Tears, without sobbing, without any visible trouble of respiration, are one of the most frequent pictures of intense grief in adult age.

In old age, tears which flow readily, hoarse and plaintive lamentations, cowardly dejection, are the habitual expressions of pain, although growing egoism and the diminution of sensibility tend to balance the progress of weakness.

If it were necessary to reduce to a few pictures the most characteristic expressions of grief at different ages, I should make the five principal types :

1. *Childhood :* Cries without tears, abundant weeping.
2. *Adolescence :* Calm and melancholy sadness.
3. *Youth :* Menacing reaction.
4. *Adult Age :* Expression of bitterness.
5. *Old Age :* Plaintive groans and tears.

In attentively observing the expressions of pain of the different specific senses, one may discover a new law which explains many obscure facts of human expression and of the highest psychology.

The specific pains of the senses take their form from the special nature of the offended organ ; their expression shows the artifices of defence as well as the other laws of sympathy which connect each sense with a given region of the brain, and, in consequence, of feeling and of thought.

Too bright a light, a want of harmony in colors, directly offend the eye. We express this specific pain in the most natural way by closing the eyes, folding the eyelids tightly, and at the same time contracting the muscles which are in anatomical and physiological relations with the orbicular of the eyelids. This expression closely resembles that by which the intellectual pains of the most elevated nature are manifested. When we see an ugly statue, an ugly picture, it is not the retina which is directly offended, it is the still unknown cerebral centre whence æsthetic energies emanate. As the pictures and statues are the first origin of the æsthetic pains, we express these by closing one eye, perhaps both, as though we were offended by too strong a light. The same thing happens when we see or when we hear a solemn foolery, unless by contrast it makes us laugh.*

It is then a law that the expression of visual pain is very analogous to that of intellectual pains, and this because the eye is the most intellectual sense, the most fertile source of ideas.

If we pass to the other specific senses, we see the same law verified.

* Mantegazza, *Atlante dell' espressione del dolore.*

Hearing is the sense most intimately and closely associated with feeling; thus the expression of the specific pain of hearing is identical with that of the most cruel wounding of our affections. In my *Atlas of Pain* I have caught the transient expression of the sudden suffering of a very sensitive young man, caused by the scratching, which he suddenly perceived, of my ten nails against the window pane.

It is then proved that the specific expression of auditory pain agrees with those of the benevolent feelings, or, as it is termed in ordinary language, of the affections.

The analogy between the expression of pains of the senses and of moral pains becomes still more evident when we study the expression of the nose.

Under the impression of a very ill odor the nostrils close, the lower lip is raised, and we involuntarily perform certain movements of the face which all tend to prevent the introduction of air and consequently of the stench into our nostrils. This expression is in every way similar to that which translates our feelings of disdain and contempt for a vile thing or for an infamous man. When the feeling of our dignity is offended by a dishonorable proposition—when, for any cause, we experience a feeling of moral repulsion, we always close the nostrils, we always raise the upper lip in such a way as sometimes to produce a sardonic smile.

The expression of olfactory pains has then many analogies with that of contempt and offended dignity.

The study of the dumb pains of self-esteem has given me the opportunity of first finding the laws of analogy of expression, which I proceed to lay down. When we offend the self-love of a man, and the latter, by reason of his social situation, or by weakness of character, cannot retaliate, still if he desires to show us that our injuries do not touch him, immediately and involuntarily the muscles of his face will grow motionless almost to the point of preventing any play of expression at all, and reaching a sort of static contraction. The movement is quick as lightning; it may escape a superficial observer; but it is very characteristic and almost identical in all men. This static contraction and this forced immobility of the face entails an accumulation of saliva in the mouth; and at the end of some minutes the offended individual is forced to swallow it.*

We may then thus formulate a fourth law: the expression of gustatory pain, and especially that produced by a bitter taste, is similar to that of the dumb anguish of self-esteem.

The expression of personal feelings is concentric and centripetal; that of benevolent affections is eccentric and centrifugal. We shall see this better later when studying the expression of passion; but for

* Darwin, *The Expression of the Emotions in Man and Animals.*

the present it is necessary to affirm the principle which also applies to the expression of pains emanating from the same source.

A very characteristic expression is that of fear, which is for us nothing but the *pain of the love of life.* Just as the centrifugal energies liberated by this sentiment are gigantic, so the pains derived from them take one of the most eloquent forms of expression.

The physiognomy of fear, as of every egotistical effective energy, is very concentric. The skin becomes white and cold, and, later, damp with sweat; the heart beats violently and irregularly, then becomes slow; respiration is labored, the hair stands erect as under the influence of cold. If fear increases until it becomes terror, the sides of the nostrils dilate; the eyes open disproportionately, and contemplate the object which causes us so much fear; they may even be unconsciously turned and move convulsively from side to side. The muscles of the face are convulsed; the whole body may oscillate like a pendulum and present spasmodic movements of different nature; finally, muscular paralysis gives to the body the aspect of a corpse or of imminent syncope; and the bowels, relaxing, allow all they contain to escape.

The expression of the pains of the intellect is the most difficult to study, perhaps because of their little expansiveness, perhaps because they are always complicated with that of other sufferings notably with those of self-esteem.

The painful expression of thought beyond the closing or the spasmodic contraction of the eye, which we have already noted, is always confined to the head, which is the principal and natural seat of this sort of suffering. The head oscillates from side to side, the brow wrinkles, we strike our heads with our hands. Sometimes with a single finger one hammers at a certain point of the forehead with repeated blows, just as one shakes a pendulum when it has stopped, to try to put it into motion again. At other times the head is scratched, or, covering the face with widely opened palms, we plunge into a long and painful meditation. And in many cases we have in addition the sardonic laughter which is so frequently an accompaniment of noble and elevated pains.

When a painful expression is often repeated on the same face for days, months, years, the muscles acquire a permanent fold, and the skin which follows all their movements is furrowed by wrinkles which will never be effaced. If to these facts which concern the functions of the voluntary and involuntary muscles we add other facts relative to nutrition or to the vascular system, such as pallor, a leaden hue, wasting, the redness of the eyes, and others of like sort, we shall have certain well-known pictures which we may indicate by the terms, a sad face, a melancholy, a painful, an anguished face, etc.

There are as many permanent expressions of pain to be counted as

there are physical and moral sufferings for man; but they may all be reduced to the following types, which are the most frequent and the most characteristic:

Permanent expression of nutritive pain.
" " genital "
" " physical "
" " the pain of self-esteem.
" " affective pain.
" " weariness.
" " melancholy.
" " mania.
" " hypochondria.

The human face may express several emotions at the same time or at short intervals, so that the last traces of one expression may be confused with the first of another expression which is beginning. These scenes are the most difficult for the physiologist to study, the most arduous for the artist to represent.

By artificially decomposing these binary and ternary combinations of expression they may be reduced to the following:

Painful expression accompanied by love.
" " " *hatred.*

In nearly all the pains of affection love manifests itself simultaneously with the intensity of the suffering. When we have the person loved before us, or his corpse, or his portrait, or even when we only see it in imagination, the expression of love may alternate with that of pain, be confounded with it, or even dominate. Well for us that artists have known how to avail themselves of this precious resource of the beautiful and have thereby created, and moved us by, incomparable works of art.*

CHAPTER XI.

EXPRESSION OF LOVE AND OF BENEVOLENCE.

JUST as pleasure and pain are the two poles of the world of sensibility, so love and hatred are the two poles of the world of passion. Thus we must direct our investigations to these points of departure if we wish to make a scientific study of expression.

As soon as an energy of affection has arisen within us, it tends to draw us to the loved object, whether this be a graceful animal or a beautiful woman, whether it be the fruit of our bodies or the elect of our hearts. This tendency dominates the whole life of the affections and all its expressions. It manifests itself with the first movement which makes us turn our heads towards the beloved object, and may culminate in the ardent embraces which sanctify the union of two ex-

* For a complete monograph see my *Physiology of Pain*, p. 227, *et seq.*

istences, and create from them a new one. From the point of departure to that of attainment the way is long, even though it may be traversed in the twinkling of an eye, on the wings of passion ; but in every case the expression of benevolence is modelled on this fundamental principle—*to draw near to that which we love.*

At the moment of this drawing near we always manifest a feeling of pleasure which has many different significations, but all may be reduced to this principal point—an exhibition of joy at being united to that which one loves, and the desire to be loved in return. There, if I am not deceived, is the elementary analysis of the simplest expressions of affection, as of the most complex—*drawing near, and pleasure full of desire.* These are the positive characters of amorous expression ; the negative characters consist in the complete absence of all expression of hatred, rage, threatening. It is a language which may be mute, which may be accompanied by some slight movements, but which every man understands at the first sight. Go and question any beautiful woman who has been for some minutes in a room surrounded by men who are watching her. She can at once whisper to you which is the one who loves her, and he who remains indifferent, he who desires her out of caprice, and he who has suddenly fallen desperately in love; and if there are many desires and many loves, she will determine the degree and nature of each.

The secondary elements of expression which are grouped round these two principles are very numerous ; the table of them will be found further on. It is right, however, to pause over several, either because they have been little studied, or because they allow us to penetrate more deeply into the mechanism of the expression of affection. Affection is an essentially centrifugal force ; it tends to pour, so to say, a part of ourselves into the person loved. Our *ego* issues almost entirely from itself to enter into another, and assimilate itself to another human nature. Thence is born an imitative sympathy, which compels us to follow with an irresistible expression the emotions which are depicted on the face of him who has awakened love in us.

This imitative sympathy is common to all sociable animals. It has been touched in passing, but with the hand of a master, by Lavater in his chapter *On the reciprocal influence of faces on each other.* See with what delicate subtilty he speaks upon it :

"It happens to all to acquire the habits, the gestures, the face of those that they see familiarly. We assimilate ourselves in some degree to all that we love ; and of two things one, either it is the loved object which models us to himself, or it is we who seek to model him to us. All that is without us acts upon us, and suffers some reciprocal action from our side ; but nothing reacts upon our individuality so efficaciously as that which pleases us, and nothing indubitably is more lovable or more fitted to move us than the face of man. That which makes it

lovable to us is precisely its harmony with our own. Would it be able to influence and attract us if points of attraction did not exist which determine the conformity, or at least the homogeneity of its forms or its features with our own? I shall not essay to penetrate the profoundness of this incomprehensible mystery. I do not pretend to resolve the difficulty of the *how;* but the fact is certain, there are faces which attract as there are others which repel; the conformity of features between two individuals who sympathize together, who are often together, corresponds with the development of their particular sensations. Our visage keeps, if we may thus express it, the reflection of the loved object."

Further on this ardent friend of men gives portraits of husband and wife to illustrate his theory of sympathy. The husband became hypochondriacally changed in face, and presented all the characters of profound desolation, and of a persistent disgust to all food. The wife, who adored him, and who followed from minute to minute the sad transformation of this cherished face, became little by little hypochondriacal herself, and her face assumed an expression similar to that of her husband. They both recovered, and reacquired their habitual expressions.

Lavater too was right when he religiously ended his chapter by very aptly quoting two beautiful passages from the Bible:

"But we all, with open face beholding as in a glass the glory of the Lord, are changed into the same image from glory to glory" (2 Cor. iii. 18). "We shall be like him; for we shall see him as he is" (1 John iii. 2).

Not only does the face of a living man awaken in us a great imitative sympathy, but it is the same thing with a portrait when it is speaking and animated. Frederick the Great had always a bust of Julius Cæsar on his bureau. I have seen this bust, and it made a deep impression on me, to such an extent does genius still, after so many centuries, shine forth from the mute marble. The King of Prussia said that Cæsar inspired him to great things. Nor to be subject to such influences must one necessarily be a great man; it is enough to be man. From my youth up I have always had a beautiful engraving of Raphael Mengs's portrait of himself hung before my eyes, precisely because this noble and inspired face always raised me into the region of the ideal, and excited me to intellectual work.

Imitative sympathy, which is one of the simplest phenomena of the reflex life of the senses, speaks with a lively eloquence in the expression of love; but it is complicated with elements of a superior order.

The simple elementary fact is manifested when by pretending to cry we make a child who is fond of us cry too, without knowing why and how we suffer.

A more complex act is that of kneeling to kiss the feet of a beloved person, as though one would reduce one's ego to a minimum, and render it dependent on a part of the beloved. I believe that this desire to merge oneself into another, to abase oneself, to aggrandize the beloved, passes beyond the narrow horizon of expression to embrace a larger field and the wider horizon of thought. We see it in the use of diminutives which lovers and sometimes friends use towards each other, and which mothers use to their children; we lessen ourselves thus in a delicate and generous manner in order that we may be embraced and absorbed in the circle of the creature we love. Nothing is more easily possessed than a small object, and before the one we love we would change ourselves into a bird, a canary—into any minute thing, that we might be held utterly in the hands, that we might feel ourselves pressed on all sides by the warm and loving fingers. There is also another secret reason for the use of diminutives. Little creatures are loved tenderly, and tenderness is the supreme sign of every great force which is dissolved and consumes itself. After the wild, passionate, impetuous embrace there is always the tender note; and then diminutives, whether they belong to expression or to language, always play a great part.

After having examined the most striking general characters of the expression of affection, let us decompose them analytically.

SYNOPTICAL TABLE OF THE EXPRESSION OF BENEVOLENCE.

- **Elementary approximating movements.**
  - Movements of the eyes.
  - " " lips.
  - " " head.
  - " " body.
  - " " arms.
- **Contacts.**
  - Caressing with the hand.
  - Kissing.
  - Caressing with the nose.
  - Caressing with the tongue.
  - Clasping of hands.
  - Different embraces.
- **Different sympathetic phenomena.**
  - Smiling.
  - Laughter.
  - Tears.
  - Side to side movements of the neck.
  - Different movements of submission.
    - Kneeling.
    - Throwing oneself on the ground.
    - Throwing oneself at the feet of the beloved.
  - Monotonous repetition of sounds and syllables without meaning.
  - Songs and musical notes.

Many of these elements of expression are also observed in animals. Darwin has described the loving cajoleries of cats and dogs for their masters, and every one may have made the same observations from nature. In my *Physiology of Love* I have described some scenes from animal life where the two essential elements of the expression of affec-

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